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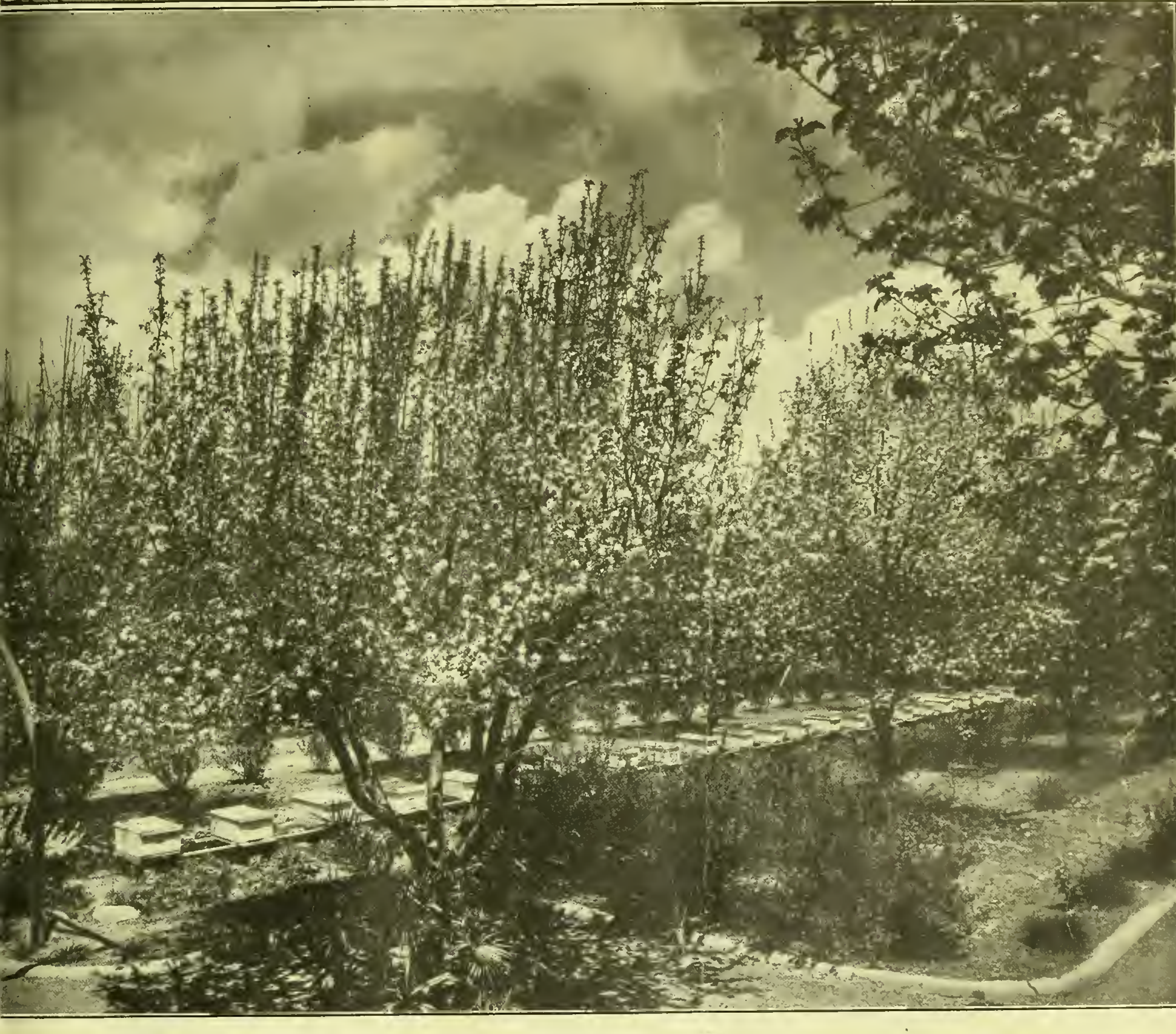

The Apiary Par-Excellence

Apiary of Wm. Babberger, Canon City, Colorado

From 25 to 45 colonies make up the apiary. One season he harvested 23,000 sections of No. 1 honey from 25 colonies.

This photograph took second prize in our picture contest recently decided. See "Far West Department."

AMERICAN BEE JOURNAL
ESTABLISHED IN 1861
OLDEST BEE PAPER IN AMERICA

PUBLISHED MONTHLY BY
American Bee Journal
1st Nat'l Bank Bldg. Hamilton, Illinois

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I have a Large and Complete Stock of BEE-SUPPLIES at **Cordele, Ga.**, and have erected a large Warehouse and filled it with New Bee-Supplies at **O'Brien, Fla.**, near Live Oak, the best shipping-point for all sections of Florida, Southeast Georgia and Southern Alabama.

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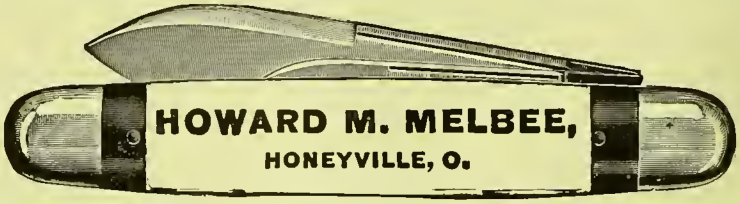

Your Name and Address will be put on one side of the handle as shown in the cut, and on the other side a picture of a Queen-Bee, a Worker-Bee, and a Drone-Bee. The handle is celluloid, and so transparent, through which is seen your name. If you lose this Knife it can be returned to you, or it serves to identify you if you happen to be injured fatally, or rendered unconscious. The cut is the exact size; it is made of best steel. When ordering be sure to write exact name and address. Knife delivered within two weeks after we receive order.

Price, postpaid, $1.00; or with a year's subscription to the American Bee Journal—both for $1.80; or given FREE as a premium for sending us 3 New subscriptions at $1.00 each.

American Bee Journal, Hamilton, Illinois.

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I have a good supply of this seed, unhulled, which I can supply at the following prices just as soon as the orders come in:

By mail, 1 pound, postage paid, 30 cts.; 2 pounds, 50 cts.

By express or freight, f. o. b. Sandpoint, Idaho, at these prices: 5 pounds for 80 cts.; 10 pounds, $1.50; 25 pounds, $3.50; or 100 pounds, $13.00.

Both as a honey-plant and soil-restorer sweet clover is hard to beat. Every bee-keeper should not only sow it himself, but should encourage others to grow it.

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OUR STANDARD-BRED

6 Queens for $4.50; 3 for $2.75; 1 for $1.00

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AMERICAN BEE JOURNAL—
Gentlemen:—Last October I purchased three queens of you for my experiments with different queens, and wish to ask you if queens of this season will be of this stock? One of the Queens is the most remarkable queen I ever owned for prolificness, which she transmits to all her daughters.
Riddle, Oreg., July 4, 1912. L. W. WELLS.

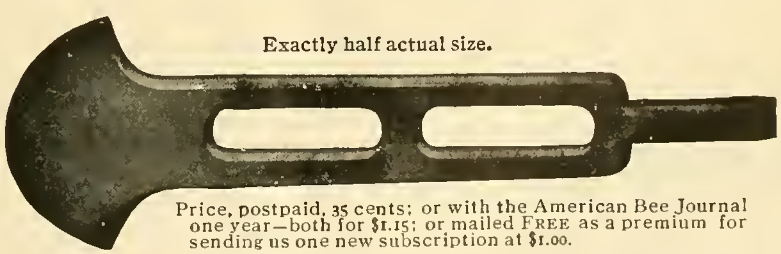
AMERICAN BEE JOURNAL—
Gentlemen:—The queen you sent me came in good condition. She was one of the best I have ever bought. I have her introduced and she is doing business as if to the manor born I want another of those beautiful queens as soon as I can possibly get it for making up my fair exhibit. Please send a fine one. Such queens certainly advertise your business.
Darlington, Wis., July 31, 1912. C. R. BRIDGMAN.

AMERICAN BEE JOURNAL—
Gentlemen:—I bought a queen of you about 35 years ago, and from her I italianized 1150 colonies of the finest beauties of unusual good qualities. I lived near Milton Center, Ohio, at the time. Yours truly,
Portales, New Mexico, July 10, 1912. J. W. HOUTZ.

We usually begin mailing Queens in May, and continue thereafter on the plan of "first come first served." The price of one of our Untested Queens alone is $1.00, or with the old American Bee Journal for one year, both for $1.60. Three Queens (without Bee Journal) would be $2.75, or six for $4.50. Full instructions for introducing are sent with each Queen, being printed on the underside of the address card on the mailing-cage. You cannot do better than to get one or more of our fine Standard-bred Queens.

AMERICAN BEE JOURNAL, HAMILTON, ILLINOIS

The Ideal Hive-Tool Free as a Premium



Exactly half actual size.

Price, postpaid, 35 cents; or with the American Bee Journal one year—both for $1.15; or mailed FREE as a premium for sending us one new subscription at $1.00.

This is a special tool invented by a Minnesota bee-keeper, adapted for prying up supers, and for general hive and other work around the apiary. Made of malleable iron, 8½ inches long. The middle part is 1 1-16 inches wide, and 7-32 thick. The smaller end is 1⅞ inches long, ½ inch wide, and 7-32 thick, ending like a screwdriver. The larger end is wedge-shaped, having a fairly sharp, semi-circular edge, making it almost perfect for prying up hive-covers, supers, etc., as it does not mar the wood. Dr. C. C. Miller, who has used this tool since 1903, says: "I think as much of the tool as ever."

American Bee Journal, Hamilton, Illinois.

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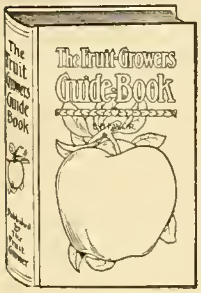
The Fruit-Growers' Guide Book



is a complete Encyclopedia of horticulture. It has 300 pages, and is well illustrated. All about spraying, fungicides, insecticides; how to can Fruits, Vegetables, etc. It was written for the man with a thousand trees, as well as for the one with a few trees in the dooryard. It is the result of years of study and travel.

The Fruit Grower, published monthly, is filled with up-to-date matter on horticulture.

THE GUIDE BOOK, regular price	$1.00
FRUIT GROWER, one year -	1.00
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February and March deliveries—for Untested, $1.50 each; April, $1.25. Tested Queens, 50 cts. additional; Select Tested, $1.00 extra. Breeders, prices on application.

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Or Berkeley, Cal.

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FAMOUS QUEENS DIRECT FROM ITALY!

Bees More Beautiful, More Gentle, More Industrious, The Best Honey-Gatherers.

Universal Exposition, St. Louis, HIGHEST AWARD.

Extra Breeding Queens, $3; Selected, $2; Fertilized, $1.50; lower prices, per doz., 50 or 100 Queens. Safe arrival guaranteed. Write

ANTHONY BIAGGI,
Pedevilla near Bellinzona,
Italian Switzerland.

This country, politically, Switzerland Republic, lies geographically in Italy, and possesses the best kind of bees known.

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Published at HOOD RIVER, OREGON,

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Subscription Price $1.00 Per Year in Advance

Sample copies upon request.

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HOOD RIVER, OREGON.

White Sweet Clover Seed

Sweet Clover is rapidly becoming one of the most useful things that can be grown on the farm. Its value as a honey-plant is well known to bee-keepers, but its worth as a forage-plant and also as an enricher of the soil is not so widely known. However, Sweet Clover is coming to the front very fast these days. Some years ago it was considered as a weed by those who knew no better. The former attitude of the enlightened farmer today is changing to a great respect for and appreciation of Sweet Clover, both as a food for stock and as a valuable fertilizer for poor and worn-out soils.

The seed should be sown either in the fall or early in the spring. 20 to 25 pounds per acre of unhulled seed is about the right quantity to sow. We can ship promptly at the following prices for the white variety:

Postpaid, one pound for 30 cents, or 2 pounds for 50 cents. By express f. o. b. Hamilton—5 pounds for 80c; 10 pounds for $1.50; 25 pounds for $3.50; 50 pounds for $6.50; or 100 pounds for $12.00.

We can also furnish the yellow biennial seed. This variety blooms about two weeks earlier than the white which makes it preferred by some bee-keepers. For the yellow seed add one cent per pound to the above prices on the white variety. Seed will be shipped promptly on receipt of order.

American Bee Journal,

Hamilton, Illinois.

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You have probably desired, for a long time, some method of binding your American Bee Journal so that you could keep your back copies in a handy, convenient and readable form.

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Make Your Hens Lay

You can double your egg yield by feeding fresh-cut, raw bone. It contains over four times as much egg-making material as grain and takes the place of bugs and worms in fowls' diet. That's why it gives more eggs—greater fertility, stronger chicks, larger fowls.

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AMERICAN BEE JOURNAL

(Entered as second-class matter at the Post-Office at Hamilton, Ill., under Act of March 3, 1879.)

Published Monthly at $1.00 a Year, by American Bee Journal, First National Bank Building

C. P. DADANT, Editor.
DR. C. C. MILLER, Associate Editor.

HAMILTON, ILL., JANUARY, 1913

Vol. LIII.—No. 1

EDITORIAL COMMENTS

Encouragement

Our thanks are due to the Editor of Gleanings in Bee Culture and to a number of friends who have privately written complimentary letters on the present appearance of the American Bee Journal. We do not propose to spend time and take space singing our own praise, for deeds are better than words. We are highly gratified with the support we are securing.

Ventilation In Cellar Wintering

At the Toronto meeting, the question of cellar ventilation elicited considerable discussion. The climate of Ontario shows much variation, from the southwestern corner, which is almost as far south as the south line of Michigan to the northeastern limit, which is farther north than the north line of New York State. For that reason, the discussion was animated, and opinions varied. Mr. R. E. L. Harkness, who lives in the extreme east of the province, gave a very interesting account of his method of cellar wintering. He leaves his colonies in the cellar as late as May; once they remained until the 11th. He does not lose any bees, and finds most of them with two or three combs of brood, when brought out. All the ventilation he gives come through the door leading into the main part of the cellar, which is contigious to his bee-cellar. But his colonies are not piled in tiers, filling up all the available space, as with most of us. He has shelves, and the hives are placed on those shelves without any bottom-board. The number of cubic feet of unoccupied space is therefore greater than in most bee-cellars, where we place the hives in tiers of four or five. The result is that the temperature is more equable, and the need of active ventilation lessened. When colonies are piled in tiers there is a sufficient amount of heat developed to greatly increase the temperature. If ventilation is given from outside, there are possibly places where the degree may be lowered to 38 or less, while other spots are still too warm, owing to the emission of heat from the clusters. Mr. Harkness' method is therefore the best. It requires a larger cellar than most of us have been in the habit of using, but it evidently pays, in the long run.

Taking all things in consideration, ventilation of bee-cellars cannot be overdone, provided the proper degree of temperature is maintained. Cellar wintering becomes dangerous only where the outside temperature is so high that it is impossible to keep the cellar cool, or where the cellar is so poorly ventilated that the air becomes foul. It should be added, however, that although it is generally considered that the temperature in the cellar should not go above 45 degrees, yet a temperature of 50 degrees or more may be all right provided there be a constant flow of fresh air.

If the cellar can be kept cool enough to maintain quietude, authorities agree that it is best to keep the bees in until the soft maple is in bloom, so they may go to work gathering pollen as soon as taken out.

A Profitable Crop

The Kansas Industrialist, published by the Agricultural College of Manhattan, gives, in its number of Nov. 2, the record of a yield of $27 worth of honey from one colony, produced in the apiary of Wm. R. Lewis. His 10 colonies gave him $150 worth in all for the season.

Advertising Honey

One of the most profitable things for advertising honey locally is a public demonstration with a hive of bees or a single comb in an observing hive. A demonstration of this kind, with full explanations, made in front of a grocery at Guelph, Ont., attracted so large a concourse of people that the street was blocked to traffic for a while. *Field days* for apiary demonstration, when extracting honey, if properly advertised, will attract hundreds of people, who will thereafter gain confidence in the producer who thus discloses the secrets of the bee-hive to the consumer. Too little is known of our industry by the masses.

Comb vs. Extracted Honey

Not so very long ago there was a cry that more attention should be given to extracted honey. Producers of comb honey were made to feel that perhaps they were making a mistake, and no doubt some of them seriously considered the question whether it might not be to their interest to change from comb honey to extracted. That was only a year or two ago. Now comes a cry of an opposite character. "The demand is for comb honey, bee-keepers should realize that extracted is a drug on the market, and should see that the demamd for comb is supplied.”

This is a little confusing. “Has there been so much change in so short a time? and if so, why?” are questions easily asked, but difficult to answer. Without attempting a full answer, we may at least consider one phase in the case, the market reports, although it is possible, even with plain figures, to make wrong deductions. Suppose we compare the reports of September, 1910, with those of the same month in 1912, taking in each case the highest quotation of those who quote by the pound in the market reports of the American Bee Journal. In 1910 the average price of comb honey was 77 percent higher than that of extracted. In 1912 it was 67 percent higher. So far as these figures indicate, they show that in the past two years the price of comb honey, as compared with extracted, instead of rising, has fallen.

A Visit to Ontario

On Nov. 11, the Editor started for the Ontario Bee-Keepers' Convention at Toronto. The Ontario Agricultural College at Guelph was visited, *en route*, and a very pleasant day was spent with the apiary students and teachers who showed us the well-known trait of Canadian hospitality.

The college apiary is composed of only a few colonies, but great care was taken of them for wintering. The hives, gathered in groups of four, are packed in large outer cases, with warm absorbents, one entrance on each side of the case.

An hour or two spent in the office of the Provincial Apiarist, Mr. Pettit, indicated the methodical manner in which the bee inspection is conducted in Ontario. The card system is used. Every bee-keeper visited during the season is recorded upon a separate card, which shows the number of colonies he possesses, the style of hive used, the condition of the bees at the time of the visit, the race of bees, etc. By this method the central office will, after a few years, possess an exact record of the state of bee-culture in the Province. Of course, the changes must be noted, but the most difficult work is surely in getting the original record established. Centers of infection of disease will be clearly delineated, and the planning of inspection work made more easy, as the task continues. Another very good plan for success in eradicating foul brood is that of having two blanks, for report by the deputy inspector and the apiarist. The deputy fills out the first blank, and upon it is an agreement to treat the diseased colonies with a specified time, which the apiarist is required to sign. The second blank is a statement which he is to date, sign and forward, that he has treated the diseased colonies as per promise. This acts as a reminder, and I am told that they are much less likely to defer or neglect treating their bees when they know that an account is kept of the work through this method. The inspectors who do not have some such plan would do well to write Mr. Pettit, at Guelph, for sample copies of these blanks.

The meeting at Toronto was well attended, probably as many being present as in the largest State meetings on this side of the line.

Synopsis of the meeting is given elsewhere in this Journal. Two things loomed up in the mind of the listener.

The alarming European foul brood is not much feared by the man who keeps pure, active Italian bees. From all sides came the assertion that black bees are unable to cope with the disease as do the Italians. Whatever might be the differences of opinion on the methods to pursue in inspection, no one differed in regard to the advisability of keeping a good breed of Italians.

The other great point brought out is the gain of co-operation. The Ontario bee-keepers have a honey-sale's committee, and we gleaned, from the statements made, the evidence that by each apiarist reporting the amount of his crop to this committee, the members became informed of the extent of the crop. Following the advice of this committee, the price was maintained, and none of the members present secured less than 12 cents per pound for their extracted honey, when a few years ago many sold it as low as 8 cents. We may well look up to our Canadian friends for example in this matter. The United States cover a much larger territory now, but there is no reason why co-operation cannot be secured as well in a large field as in a comparatively small one.

By rising early on the morning of the second day, we were enabled to visit the Ontario Horticultural Exhibit, at the beautiful exhibition grounds, on the shore of Lake Ontario. We have seen nothing finer anywhere, in fruit, apples, pears, etc., in vegetables and in honey. Two large pyramids of honey were conspicuous, mainly extracted honey, for this is the staple product of Canadian apiarists. Middlesex county, represented by six exhibitors, had the most dainty display that we have ever seen anywhere.

Freight Rates and Honey

We call the attention of our readers to the article bearing this title in our contributions. Mr. Smith is a railway agent and speaks knowingly. The railroad managements are often to blame for arbitrary rates, charging much more for a short haul where there is no competition than for a long competitive haul. But Mr. Smith touches the weak spot in honey packing by the average bee-keeper, unless he has had long experience. Any one who has handled shipments of honey and beeswax from all parts of the country knows how often a package arrives at a destination without any marks whatever, or worse, perhaps with the name of a big soap or cereal firm which has not been erased from the box. If we desire to secure better rates, we should learn to pack our goods carefully, distinctly, and in accordance with schedules. Until we are careful ourselves we must not blame others for being careless.

Parcels Post

The new parcels post law is in force from and after the first of January. A few months' trial will most likely convince our retail trade that they are in no danger of losing their customers from this cause. The rates are still too high, and evidently aim to protect the Express companies; but this is an entering wedge, and we will soon catch up with other nations which have led us in this years ago.

The maximum weight that may be sent is 11 pounds, in one package. The rate for the 11 pounds is:

Within the delivery limits of your Post-office, 15 cents.

Within	50	miles,	$ .35	cents
“	150	“	.46	“
“	300	“	.57	“
“	600	“	.68	“
“	1000	“	.79	“
“	1400	“	1.00	
“	1800	“	1.11	“

For all distances greater than 1800 miles, the rate is the same as the international rate, or $1.32 for the maximum of 11 pounds.

But we are still above the international rate in “samples of merchandise.” You may send samples of your goods in lots not exceeding 12 ounces to the end of the world, in the Universal Postal Union, for one-half cent per ounce, or 6 cents for the 12 ounces, with a minimum rate of 2 cents; but you cannot send the same package within the United States, in the third zone, less than 300 miles, for less than

7 cents, or one cent more than the international postage.

Four ounces of "samples of merchandise" will go to the end of the world for 2 cents, but the same package within the limits of our own rural route will cost 4 cents.

It is worse than ridiculous that the Japanese, or any other nation, be able to send us 4 ounces of samples for less money than we can send the same amount within our own town.

The people of the United States will not be satisfied with our postal law until we can deliver any postal matter *at least as cheaply within the limits of our own country as in the Universal Postal Union.* We are still behind all other civilized nations, in this respect. We owe it mainly to the graft of the express traffic.

Feeding Lump Sugar

Feeding lump sugar is good in many circumstances, but we suggest that, for spring, it is a better plan to dilute the sugar and feed it warm. There is very little danger of inciting robbing, for its odor is light. Warm and diluted food is of importance during the cool days of spring. It has a tendency to induce breeding, and this watery food saves the bees many trips to the water-trough. Many old bees are chilled at the season when they are of the most value, by trips in quest of water for brood-rearing. Some loss is avoided by the use of this thin, warm syrup. But for winter, dry food is best.

MISCELLANEOUS NEWS ITEMS

Iowa Bee-Keepers.—The first meeting of the Iowa State Bee-Keepers' Association, held in Des Moines Dec. 12 and 13, 1912, was a success in every way. Between 40 and 50 bee-keepers were present.

Besides the different addresses from bee-keepers at the meeting, talks were given by the State Entomologist and by Prof. Kennedy, of the Extension Department, both of whom gave every encouragement to bee-keepers towards securing what they want from the Legislature.

State grading rules for comb honey were adopted. The necessity for these was evident, as sections offered for sale on the Sioux City market were exhibited at the meeting, some of which contained less than 11 ounces of honey, and could not even be graded as culls. One section was shown which actually had scales of foul brood present.

The necessity for an appropriation to fight diseases was made plain. Iowa has now a very efficacious law, but no appropriation to carry it out. American foul brood is reported as present in at least 34 counties. In addition to an appropriation of $10,000 for inspection, the Association will ask for a chair in bee-keeping at the State Agricultural College, an extension lecturer, better premiums and facilities for exhibiting at fairs and an Assistant in apiculture under the direction of the State Entomologist, this Assistant to be State Inspector. Legislation will also be asked, prohibiting the transportation of bees from one county to another, or from other States without a certificate of inspection.

Demands for inspection became so insistent last summer that the Governor and the Executive Council sent Mr. Pellett through the State on tours of inspection, his expenses being borne out of the General Funds.

This shows that it is high time that the disease situation be immediately dealt with, in Iowa, with vigor.

This can be accomplished in only one way, the appointment of an efficient inspector and deputies with sufficient funds at their disposal that the work be not hampered financially. Every progressive Iowa bee-keeper must impress upon the representative and senator of his district the need of such appropriation. The Governor has already promised his support.

The officers elected for the ensuing year are: President, Frank C. Pellett, of Atlantic; Vice-President, J. W. Stine, of Salem; Secretary, S. W. Snyder, of Center Point; Treasurer, C. H. True, of Edgewood.

Directors—H. B. Miller, of Marshalltown, A. H. Bonney, of Buck Grove, E. C. Wheeler, of Marshalltown.

◆

Redwood Lumber for Bee-Hives.—On page 237 of Gleanings in Bee Culture, April 15, 1912, M. D. Price speaks of buying hives made of redwood which were 15 years old, and were as sound as a dollar. Commenting upon this, Mr. H. Vogeler, of Oakland, Calif., sent us a newspaper clipping from the Saturday Bee, of Sacramento, which says:

> "Redwood is easily worked, takes a beautiful polish, and is one of the most durable of the coniferous woods of California. It resists decay so well that trees which have lain 500 years in the forest have been sent to the mill and sawed into lumber. The wood is without resin, and offers a strong resistance to fire. Insects seldom injure it because of an acid element it contains."
>
> "Redwood timber," says Dr. Hermann von Schrenk, of the Bureau of Plant Industry, "possesses lasting qualities scarcely equaled by any other wood. Although very light and porous, it has antiseptic properties which prevent the growth of decay-producing fungi. So far as is now known, none of the ordinary wood-rotting fungi grow in redwood timber. It is because of its resistance to most forms of decay that the redwood reaches such a great age."

Mr. Vogeler states that he has seen hives 40 years old made of redwood and as good as new.

Some one will say: How can they tell that a dead tree has been lying in the forest 500 years. We asked the same question when we visited the big sequoias. But the answer was at hand, for our attention was at once called to younger trees apparently of that age, and already six or eight feet in diameter growing right where the head of the giant must have struck in its fall. But the California climate is especially adapted to the durability of wood, for the rainy season is short.

When all is said, however, the redwood has wonderful lasting qualities. We see no reason why it should not be used extensively for hive making, since our white pine forests are rapidly disappearing.

◆

Pecos Valley Meeting.—The members of the Pecos Valley Association met in annual convention at Roswell, New Mex., at 9 o'clock, Nov. 12, 1912, R. B. Slease, president, presiding.

About 2500 colonies of bees in Chaves county, and not far from that number in Eddy county, were represented.

Some of the leading orchardists of the section attended. Mr. Robert J. Beers, of Roswell, a very successful orchardist, spoke in the interests of apiculture, and recognized the honey-bee to be of great value in the growing of large and perfect crops of fruit.

R. B. Slease was for the fourth time elected President of the Association; Vice-Presidents, Henry Adams, of Greenfield, Edward Scoggin, of Hope, M. N. Cunningham, of Carlsbad. Secretary-Treasurer, Henry C. Barron.

The proposed amendments to the National constitution were approved except Section 3, Article IV, as it was deemed advisable to have all memberships fall due in January of each year, thus simplifying records.

Henry C. Barron was elected delegate to the National convention to be held at Cincinnati, Ohio, Feb. 12 and 13, 1913.

The matter of supplies was taken up and discussed to some extent. Spraying with arsenic while the fruit-trees are in bloom, was recognized by the bee-keepers as a great damage to the bee-industry. Several hundred colonies were killed in the spring of 1912, in the Pecos Valley.

HENRY C. BARRON, *Sec.*

◆

Honey Selling in Australia.—Goodfellow's idea of marketing honey is to ship it to Sydney to an agent, part of whose business is to ship it to Goodfellow's own local storekeeper, to supply Goodfellow's own immediate neighbors, and to ship it to towns and villages, up the line, beyond Goodfellow's own railway station.

Now, dear editor, just say, "Look here Goodfellow, there are 5,000,000 people in Australia, and they have a gob apiece, and they are, every one, ready to stick good honey in it at a bigger price than they pay for the blackest of treacle or handsomest of golden syrup. Just you get busy and get the chap that lives alongside of you to eat honey; see that the folks in your near-by towns, and the people on the roadside, get the honey habit, and keep your products away from the big smoke, where they don't eat it, but try to sell it in just such out-back places as *you* live in. The prosperous people of our land can better afford to eat honey at decent prices than the poorer paid artisans, etc., of Britain and the 'Continong' can, and those same decent prices, plus extra packing, extra carrying and extra commissions."

Yours ever, G. R. HARRISON.
"Glen Havard," Ourimbah, N. S. W.
—*Australian Bee Bulletin.*

◆

Portrait Photographed Through the Eye of a Bee.—Our readers know, as everybody does, that if you look into the eye of any one you will see your picture there. The British Bee Journal, in its Nov. 7 issue, gives an enlarged reproduction of a small portion of the eye of a bee, some 240 facets, with, in each of them greatly magnified, the face of Mr. James Bancroft, as photographed by Mr. Watson.

"To obtain a portrait of Mr. Bancroft was simple enough, as was also the procuring of a few of Mr. Bancroft's bees and dissecting some of their eyes; but setting up an eye so that the portrait could be seen through it and photographed was a somewhat different matter. First, a dissected eye had to be mounted so that it could be placed upon the stage of a microscope for observation. Next, a transparent positive, on a reduced scale of the portrait, had to be made to be seen through the eye. Then an apparatus was necessary for enabling a strong light to be thrown through the portrait and the eye, on to a sensitive photographic plate."

It must not be supposed that an insect sees separate images of objects, as repeated in each facet. Only one impression reaches the brain, as is the case with human beings, even though, in the case of the bee, several thousand impressions are made on the numerous facets of their compound eyes.

This article, in the British Bee Journal, is well worth, by its interest, the price of a year's subscription.

◆

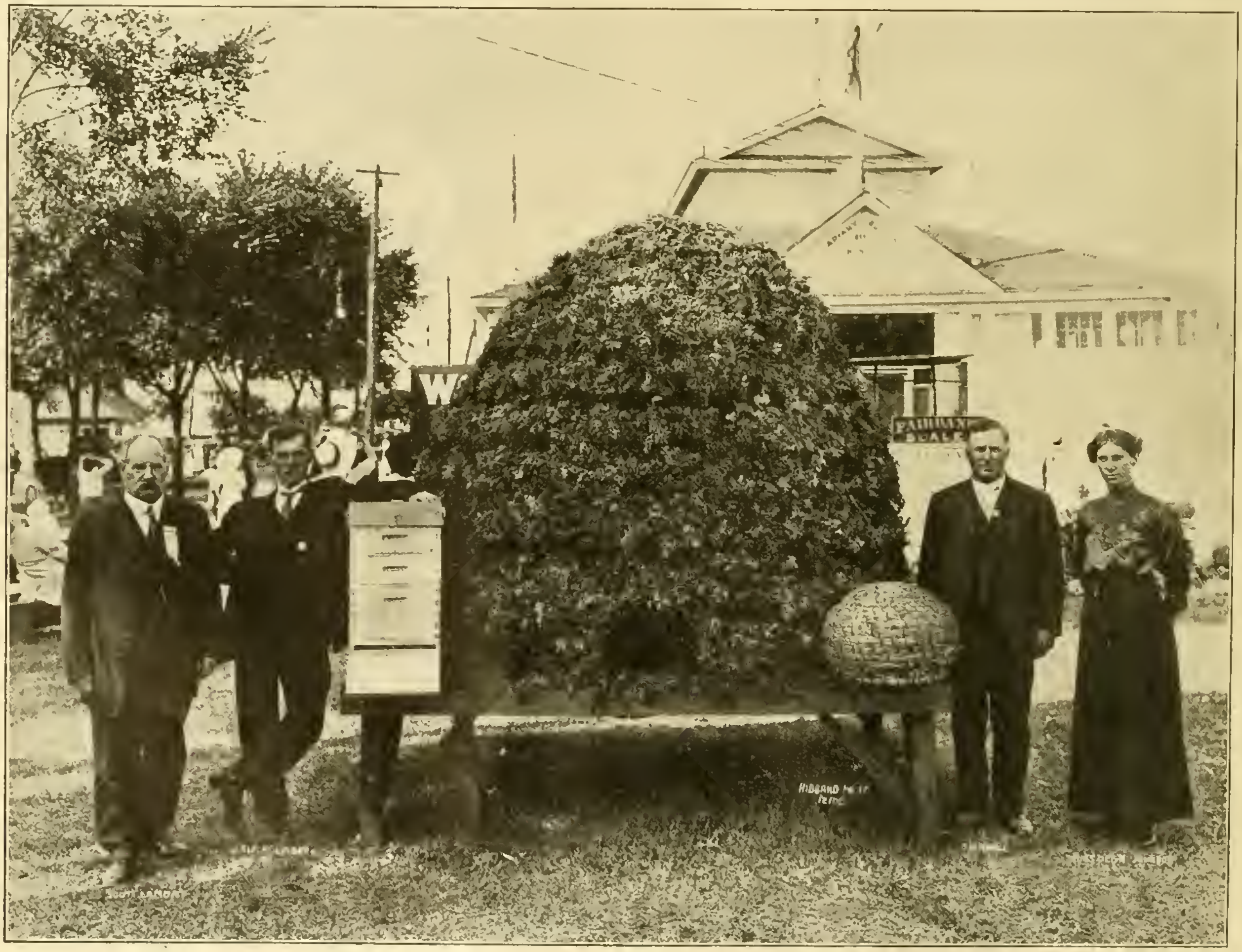
Shaking Bees Out of Box-Hives.—When bees are transferred from box-hives to movable-frame hives, the usual way has been to drum them out, making the bees run up into an empty hive placed over the full one. Now they are reversing the performance in Germany, where box-hives are still the common thing. An empty hive is placed upside down upon the ground, and the full hive over this. The two are strapped together, and then both are lifted and jarred upon the ground until the bees are shaken out. Of course, care must be taken not to jar hard enough to break the combs loose. It is said that this takes only a third as much time as drumming.

◆

A New Honey-Strainer.—Most extracted honey, if strained at all, is probably strained through a single thickness of cloth. The difficult thing is to know just how fine a mesh the cloth should have. If it is coarse, particles of wax, etc., will pass through it. If it be fine, all the impurities, large and small, accumulate upon it, and in a little while it becomes clogged so that the honey passes through too slowly. Those of us who had opportunity to try the first extractors ever made still remember that the sieves provided at the bottom of these machines by the first manufacturers had to be removed because they clogged at once.

The illustration, given in Bienenwirtschaftliches Bienenzeitung, page 237, shows a strainer, invented in Germany, intended to overcome the difficulty.

It has three strainers. The upper one is quite coarse, taking out only the larger particles of foreign matter. The middle one is a little finer, and the



A large straw-hive imitation, with a modern hive and an old-time straw-skep, in front of the apiary building at the Minnesota State Fair, September, 1912. The small straw skep was furnished by N. E. France, judge of the Apiary Exhibit. Our readers are aware of the fact that Minnesota leads all other States in the amount of premiums paid for honey and apiary exhibits. At the left of the picture is Superintendent Scott Lamont, whose portrait we gave in the August number, page 233. The gentleman by his side is the State Apiary Inspector, J. Alf Holmberg. The lady on the right hand, Miss Johnson, was employed to do the apiary manipulations, which she did very creditably.

lower one is fine enough to leave the honey entirely clean. With this arrangement a large amount of honey will pass through before there is any clogging. The lower one is the most inclined to clog, and so an extra lower strainer goes with each apparatus. The whole apparatus is 40 inches high, and the strainers are a foot in diameter. Each strainer may be taken out separately. It is called "Fix," "fix" being the German word for "quick." It sells in Germany for about $5.00.

Even with this improvement upon the initial methods, the work of straining thick honey is probably anything but "quick."

◆

Manipulation of the Wax Scales by the Honey-Bee.—We received some time ago, from the United States Department of Agriculture, through the courtesy of Dr. Phillips, a pamphlet on the above-named subject, by D. B. Casteel, of the University of Texas. We found it so interesting that we tried to secure two of the cuts illustrating the subject. These we are unable to get. Those of our readers who may be interested should write to the Department of Agriculture and ask for Circular No. 161, Bureau of Entomology.

◆

The Nyasa Bees.—The British Bee Journal contains a series of articles concerning the Nyasa bee. The Nyasa Land is situated west of Portuguese and German South Africa and east of Rhodesia.

These bees are smaller than the common honey-bee. The writer, L. W. J. Deuss, reports their cells to number 65.6 to the square inch, while our bees have only 57.6 in the same space. Their drone-cells number 49.2 per square inch, while ours have only 37, or a fraction under this. It appears, however from the report, that they can and do use without difficulty comb foundation as manufactured by the Weed process.

They build their homes in an improvident manner, "settling in the dry season where the rainy season will wash them out, or making their home in the rainy season where in the dry season the sun will melt their combs; in holes in the earth, between rocks, in the walls of houses, under a fairly dense bush, under a palm leaf in the open."

The color of these bees is very similar to that of the Italians.

◆

Man's Handicraft and Nature's Provisions for Vegetation.—The accompanying picture shows the north half of the immense power plant now being built at the foot of the Keokuk bluffs, opposite Hamilton, for the big dam across the Mississippi River, just between the two cities. This photograph, which was specially taken for the American Bee Journal by courtesy of the Mississippi River Power Company, also illustrates the contrast of Nature's work and man's handicraft, to which few people have given a thought. This part of the Mississippi River bed, which is 12 feet, more or less, below the surface, was, for the first time in the existence of the stream, laid bare by the building and pumping out of a 35-acre coffer-dam in May, 1911. *Within two weeks after the water was pumped out,* honey-plants and weeds, such as sweet clover, persicarias, hearts-ease, Spanish-needles or bur-marigold, cockle-burs, rag-weeds and aquatic plants sprung up spontaneously wherever man's foot did not trample.

THE RIVER BOTTOM IS A NATURAL SEED BED.

Think of it! This means that the entire bed of the mammoth Mississippi River, 1500 miles in length, and averaging more than a mile in width, must be at all times covered with drifting seeds which await only an opportunity to grow. Does this not indicate, better than anything else that we might mention, the plentifulness of Nature's provisions?

The magnificent structure in the background, of which only one-half shows in the photo, is the largest power house in the world, and is connected with the big dam shown in our issue of May, 1912. It is the work of Hugh L. Cooper, hydraulic engineer of imperishable fame. This work is next in magnitude to the Panama Canal, and is creating a lake 65 miles in extent in lieu of the shallow Des Moines rapids of the Mississippi. It will enable ships of greater draft than formerly to descend the Upper Mississippi to New Orleans, thence to reach Panama.

The 30 big arches at the base of the building, which are the intakes for the turbines of 10,000 horse-power each, will be completely submerged, and the river bed shown in the picture will then be 50 feet under water. The smaller buildings are temporary shops within the coffer-dam. The earth wall which hides the base of the buildings in the background was a temporary coffer-dam dividing the area originally into two sections.

A full view of the entire works, from the Keokuk bluffs, will be given in this magazine ere long.

◆

Youth Restored to Joaquin Miller by Honey and Hominy.—Hominy and honey may once more be regarded as something good to eat. Joaquin Miller, the California poet, has made the dicovery. Upon the homely diet of his forefathers he has entirely recovered from his recent illness, and at the age of 75 years has undertaken what he considers the greatest poem he has ever worked upon.

The explanation has come in the announcement of his daughter, Juanita, that his diet for the past year has been restricted to hominy and honey. She says that her father has eaten it as often as three times a day, and during the past few months he has urged the food upon his visitors.

A large pan of the food has become a sort of an institution at the Miller home on the "Heights," back of Fruitvale. Questioned about his health, the poet declared that he never felt better in his life.

The poet is advancing the contention in his new poem that "God's way with man will not be done until these two seas are made as one," referring to the merger of the Atlantic and Pacific Oceans through the medium of the canal.—*Cincinnati Post*

◆

Meeting of National Association Delegates.—Notice is hereby given that the Delegate meeting of the National Bee-Keepers' Association will be held in Cincinnati, Ohio, Feb. 12 and 13, 1913.

While *all* sessions will be open to the members and visitors, some sessions will be devoted *wholly* to business, through the delegates. At least one session each day will be set aside for the members to discuss such subjects as may be decided upon later, notice of which will be given out by the Secretary.

The subjects that will likely be selected for discussion will be of national character rather than pertaining to the production of bees and honey.

E. D. Townsend, *Chairman*.
Remus, Mich., Oct. 1.

◆

More About the Tin Section.—Replying to your invitation on page 327 of the November issue of the American Bee Journal, I beg to submit the following:

A most radical change was made in the production of comb honey through the evolution of the sanitary comb-honey package. The section holders have grooves, thoroughly protecting the side and edges of tin sections, so that cleaning them is avoided. The package keeps honey from harmful contamination, and reaches the consumer as inviting as it leaves the apiary.

The lithographed top with its celluloid disk will make the package a quick seller. Shipped at fourth-class freight rates in 50-pound containers made of corrugated paper, it will reach consignee in perfect condition, no leakage of honey, and every package salable for the highest market price.

The cost of production is the main question. The closest estimate at present on labor and material is that the package will cost about 3 cents more to produce and market than the wooden section. Each package should bring at least 5 cents more on the market than the wooden section.

Paul Hunten.

◆

Washington State Meeting.—Following is the program of a two-days' convention which will be held by the Washington State Bee-Keepers' Association Jan. 8 and 9, at North Yakima:

FIRST DAY—WEDNESDAY, JAN. 8.

Morning Session, 9 a. m.

Meeting called to order by A. E. Burdick, President, after which annual reports of the President, Treasurer, and Secretary will be given.

10 a.m.—Address of Welcome by A. J. Splawn, Mayor.

Response by President A. E. Burdick.

Paper from Miss A. A. Byers, Chelan county.

Afternoon Session.

1:30 p.m.—"Spring management of bees," by Robert Cissna. Followed by discussion.

2:15—Address by George W. York, President National Bee-Keepers' Association.

3:00 p.m.—"Preparing bees for winter," by Virgil Sires. Followed by discussion.

Paper from C. P. Dadant, of Hamilton, Ill.

Paper from A. G. Kuykendall, of Grandview.

SECOND DAY—THURSDAY, JAN. 9.

Morning Session.

9:00 a.m.—"Should we produce a larger percentage of comb honey?" by C. W. Higgins, of Wapato. Followed by discussion.

10:00 a.m.—"What has been the success of the Honey-Producers' Association in handling the 1912 crop?" by A. E. Burdick, President.

10:30 a.m.—"What benefits do the bee-keepers enjoy from the National Association?" by E. B. Tyrrell, Secretary National Association. Followed by discussion.

11:15 a.m.—"Should the manufacturers and bee-keepers be more in sympathy with each other?"

A paper from The A. I. Root Company, followed by discussion.

A paper from some bee-keeper of a scientific nature. Banquet at 12:00 m.

Afternoon Session.

Election of officers for the ensuing year.

2:00 p.m.—"My method of handling bees at swarming time," by Lee G. Simmons, Vice-President, Ellensburg. Followed by short discussion.

2:30 p.m.—"Weather conditions favorable for the secretion of nectar in bloom," by S. King Clover. Followed by discussion.

2:30 p.m.—Paper from F. C. Fischer.

We will discuss ways and means of enlarging the membership of the Association, and of making the meetings more educational, enthusiastic and entertaining.

The Washington Honey-Producers will hold their annual election of officers and other business necessary to be transacted on the 10th, following the bee-keepers' convention, at 9 a.m., in the Court House, by order of the President and Secretary.

J. B. Ramage, *Sec.*

◆

August Number Attracts Attention.—The New Zealand Farmer, a large monthly of 160 pages, published at Auckland, N. Z., reproduces in its November edition a *facsimile* of the C. C. Miller method of queen-rearing, taken from the cover of our August number, with a short description of this method. Dr. Miller is appreciated abroad as well as at home.

◆

Death of Paul Mickwitz.—We are exceedingly sorry to be informed of the sudden death of Mr. Paul Mickwitz, of Helsingfors, Finland, who formerly spent two years in the United States to practice bee-culture with leading apiarists. Mr. Mickwitz, who was with us for three months, was a young man of great ability. His earnestness and intense desire to foster progressive bee-culture in Finland induced him to import Carniolan bees there. His trip of the past summer was mentioned in our columns, page 341, and the present number contains three small snapshots sent to us by him. He had promised us an account of his trip. Our hearty sympathy goes to his family.

The Late Paul Mickwitz.

◆

The Texas Fairs.—The State Fair of Texas, held annually at Dallas, and the Texas Cotton Palace of Waco have been very liberal in the encouragement given the bee-keeping industry. The making of premium lists has been referred to the Texas Bee-Keepers' Association, and superintendents and judges chosen by the latter body have been recognized by the Fair Associations.

The exhibits have been truly representative of the bee-keeping industry of Texas. This year's exhibit was the best that has been held. Mr. T. P. Robinson, of Bartlett, president of the Texas association, is Superintendent of the Bee and Honey Exhibit at the State Fair, and Mr. W. H. Laws, of Beeville,

The Julian Alps—Carniola.

holds a like position at the Cotton Palace.

Mr. Wilmon Newell, State Entomologist, kindly loaned a most instructive exhibit and display, with mounted specimens, of the work and habits of the wax-moth.

All grades of Texas honey were shown most attractively, and every operation of modern bee-keeping was constantly being explained to the visiting crowds. This educational work was carried on without intermission by a committee of bee-keepers who gladly gave their time and paid their own expenses during the entire fair.

The spirit shown by these men and their painstaking work in explaining the simplicities of bee-keeping to interested farmers cannot but give Texas bee-keeping a great and immediate impetus.

An octegenarian retired bee-keeper, Major W. P. Hough, of Floresville, added a touch of real art to the exhibit by displaying some wonderful creations in beeswax. Major Hough owned the first factory for the manufacture of bee-hives in Texas, and is well known to the fraternity of 30 years ago. His advancing years have made necessary a cessation of active work. He still loves bees, and insists that the true medium of art is beeswax.

He had on exhibition two large models of the Alamo, one showing the fall and massacre in 1836, and the other as it appears today. These were in bas-relief on a background of wax. Wax of different colors was used for trees and figures in a manner surprising to one who had never seen the decorative possibilities of pure beeswax.

Another of Major Hough's creations was a curio hive made entirely of beeswax with glass paneled sides in the shape of the bust of a prominent Texas bee-keeper, and containing a full colony of bees.

Mr. L. W. Avant, of Atascosa, exhibited at the Cotton Palace a section of comb in which the cells were made of paper which had been filled and capped by the bees. This was wonderful to visiting bee-keepers, as showing what bees can be forced to do by intelligent management.

A large exhibit of bee-keeper's supplies was displayed by the Southwestern Bee Company of San Antonio. This enterprising firm has been awarded diplomas by the Texas Fairs for four successive years, and by its efforts has done much to make these annual exhibitions a success.

These expositions are doing great good for the development of Texas bee-keeping, and just now are of great value because work on a new appropriation at the next session of the Legislature is the "order of business," and anything that will place the industry prominently before the people will be of assistance.

◆

Bur and Brace Combs.—Referring to Mr. Scholl's article in this number on brace-combs, we agree with him that they are mainly due to a crowded condition. Narrow top and bottom bars encourage the bees to build them because they can more easily join one story with the next. The bees evidently aim to make continuous combs from bottom to top of the hive. The more different stories we have, the more brace-combs will be built, other conditions being equal. The more stories we have, the more combs we will have to scrape in the spring.

Brushing Bees into Shipping-Cases.—P. Mickwitz—(See opposite page.)

◆

Ohio State Meeting.—The following is the program of the Ohio State Bee-Keepers' Association, which will be held Jan. 14 and 15, 1913, at Townsend Hall, Ohio State University, Columbus, Ohio:

PROGRAM.

TUESDAY 2:00 P.M.

President's Address.
Discussion.
Report of Secretary.
Report of Treasurer.
Result of Apiary Inspection in Hamilton County—Fred W. Muth.
With the Apiary Exhibit at County Fairs—Glenwood Board.

TUESDAY, 7:30 P.M

Apiculture at the University—Prof. J. S. Hine, Ohio State University.
Address—Organization—E. B. Tyrrell, Secretary National Bee-Keepers' Association.
Address—C. P. Dadant, Editor American Bee Journal.
Live Bee Demonstration—E. R. Root, Editor Gleanings in Bee Culture.

WEDNESDAY, 9:30 A.M.

Florida Bee-Keeping—J. B. Marchant.
Queen-Rearing—J. C. Mosgrove.
My Experience with European Foul Brood—B. J. Holden.
Ohio Apiculture—Impressions of a Farmers' Institute Lecturer—Prof. W. A. Matheny, Ohio University.

WEDNESDAY, 1:00 P.M.

A Womar's Way with Bees—Mrs. Jessie Goodrich.
Wax Rendering—H. H. Root.
Production of Comb Honey—A. A. Doeges.
Production of Extracted Honey—H. C. Quirin.

◆

Eastern Illinois Meeting.—The Eastern Illinois Bee-Keepers' convention will be held in St. Anne, Ill., Feb. 4 and 5, 1913, including evening session on the 4th. Those who have promised, and others that we expect are C. P. Dadant, J. E. Pyles, A. L. Kildow, Frank Shupe, Walter Sorensen, H. Roorda, N. A. Timmons, J. Roberts and others. We want to make this meeting as important as the State convention, and want our picture "took" for the bee journals. Come and be one of us, and bring your questions. We expect good speeches, but the question-box will prevail.

H. S. Duby, *Sec. pro tem.*
G. T. Willis, *Pres.*

◆

Apiary Inspectors.—A meeting was called for Tuesday evening, Dec. 31, at the Normal School Building of Cleveland, Ohio, for the purpose of forming a permanent organization of Apiary Inspectors of the United States and Canada. A change is contemplated in the constitution of the Association of Economic Entomologists for the affiliation of Apiary Inspectors, if the latter desire it.

We will keep our readers informed of such action as may be taken.

◆

Apiculture at the Oregon College.—A two-weeks' short course in apiculture will be given during January at the Oregon Agricultural College by Mr. H. F. Wilson, Assistant Professor of Entomology.

The course will comprise the following subjects:

'Location and Care of the Apiary, The Bee-family and their Development, The Productive Glands of the Honey-Bee, Hives and Implements, Manipula-

Shipping-Cases the Day Before Starting—P. Mickwitz—(See opposite page.

tion and Management, Feeders and Feeding, Swarms and Swarming, Queens and Queen Introduction, Transferring of Bees, Bee-Diseases.

On Jan. 29 the members of the Oregon branch of the National Association will hold their semi-annual meeting at Corvallis, and on the same date the students will give a demonstration, illustrating the correct and incorrect methods of handling bees. For further information address,

H. F. Wilson.
Agricultural College, Corvallis, Oreg.

Indiana Meeting.—The meeting of the Indiana branch of the National Association will be held in Indianapolis, Ind., in the Palm Room of the Claypool Hotel Jan. 24, 1913. The foul brood conditions, and what has been accomplished, and will be accomplished, will be discussed by C. H. Baldwin, State Entomologist.

Other speakers and their subjects will be:

Outlook for Indiana Honey and Developing Home Resources—D. W. Erbaugh, Ernest Root.

Marketing Indiana Honey—John C. Bull, Geo. W. Williams.

Co-operation and Organization—E. B. Tyrrell.

We have invited Dr. Phillips, Geo. Demuth, and C. P. Dadant, and fully expect some of them to attend. We are expecting a live meeting, and are making a special effort to develop more fully Indiana's honey resources. Indiana buys carloads of honey from the West every year, much of which is inferior to the home product. When we can have the honey for gathering it, and a market at our doors, there is no use importing any honey at all. Let's get together and furnish it all ourselves.

Geo. W. Williams, *Sec.*
Mason J. Niblack, *Pres.*

National Bee-Keepers' Convention.—Following is the program of the National Bee-Keepers' Association to be held at Cincinnati, Ohio, Feb. 12 and 13:

At 10 a.m. Feb. 12, the meeting will be called to order, and the proper committees appointed, including the committee on credentials. Meeting will then adjourn to enable the delegates to file their credentials with this committee.

At 1 p.m. the meeting will again be called to order, when the regular business will be taken up by the delegates. This meeting will be open to all members, but the voting can only be done by the regularly elected delegates.

At 7 p.m. the meeting will be called for a general program, in which all visitors will take part.

At 8 a.m., Feb. 13, the delegates will again take up the business matters, and should they be able to conclude their business before noon, the balance of the time will be taken up with a general program.

At 1 p.m. there will begin another general meeting of all present.

Headquarters have been arranged for us by the Cincinnati Chamber of Commerce, and a list of hotels and their rates will be given in full in the February bee journals.

E. B. Tyrrell, *Sec.*

BEE-KEEPING FOR WOMEN

Conducted by Miss Emma M. Wilson, Marengo, Ill.

Queen-Cells in Sections

In scraping sections two sections were found with a queen-cell down in one corner, the cell showing that a queen had hatched. No other brood had been present. Unfortunately this is nothing so very unusual. Some years, more than two queen-cells have been found in sections, and the question is raised whether these were supersedure-cells or swarming-cells, with the uncomfortable feeling that they may have been the latter, and that a swarm may have taken its departure without being noticed. When queen-cells are found in sections it is quite likely that other brood will be present, and if the section is not entirely filled with foundation that brood is almost certain to be drone-brood.

Of course, the use of excluders would entirely prevent the queen from going up to lay in the sections, yet we do not consider it advisable to use excluders, for the trouble we have with brood or queen-cells in sections is less than would be the trouble of excluders. But if we should use small starters in sections, or anything less than sections filled with foundation, we would no doubt be obliged to use excluders. When any one complains that he has trouble with brood in sections, it is a pretty safe guess that his sections are not filled with foundation. And there are plenty of other reasons for full foundation in sections.

Another Cooling Cup

When the next warm weather comes try making a combination of fruit juice and ginger ale if you wish a delectable, refreshing beverage.

Use these proportions: Four oranges, three lemons (rind and juice), one tablespoonful of extracted honey, ½ teaspoonful of pulverized cinnamon, ½ grated nutmeg, 24 cloves, a pinch of ground allspice, a cupful of flaked pineapple, 2 cupfuls of iced water and a pint and a half of ginger ale.

Stick the cloves into the oranges through the outer skin and leave for 2 hours in a cold place. Rub the yellow zest of the lemon into lump sugar, using one lump for each lemon. Put the sugar into a glass jar, strain in the lemon juice, then add the cinnamon, nutmeg, allspice, honey and pineapple. Cover and put in the ice-box until ready to serve.

Then turn it into a cold bowl, add the strained juice from the clove-stuck oranges, the 2 cupfuls of iced water and the ginger ale. Serve, while it effervesces, in small punch cups. Sip a mouthful at a time, or straws may be used. A cupful of grape juice may be incorporated with good results.—*Chicago Record-Herald.*

Report and Questions from Washington

On two occasions during the past summer I had two large swarms settle on the same branch close together. They were quite low, and I placed two hives on a table close under, the entrance of a hive coming in contact with each swarm. The bees at once began to go in, and in less than one-half hour they left one hive and clustered around the other. I placed the empty hive above, and they went in and remained.

1. I did not put on a super, and have been wondering how I will handle them in the spring. I am planning to divide, and if I do, where shall I look for the queen?

2. Providing there is brood in both hives, can I make two colonies by removing the upper body?

3. A number of people keep bees here, and the place is too crowded. I have 27 colonies, and think I can do better with one-half of them, or less. As I cannot sell the bees to any one outside of the neighborhood—which would be the same as keeping them—I have decided to kill part of them, those that gave no surplus. If I can keep the old comb that has pollen in it where it will not mold or candy, would it do to feed the bees in the spring?

4. When would be the best time to do so?

5. Would heating the comb injure the honey for feeding?

6. Is pollen and bee-bread the same?

7. Is there any way to separate honey from bee-bread so it will be fit for table use? I have melted the comb in the oven and drained off the honey, and while it *looks* clear and nice, I imagine it does not taste good.

A great many bee-keepers ask me questions about bees, and when I tell them what a fine thing the Bee Journal is to keep one posted, they say they do not have time to read, or make some other foolish excuse for not taking a paper; even saying it is not worth while. Yet they are willing to learn from others. Some folks are odd; don't you think so?

Mrs. Gertrude L. Goodwin.
Roy, Wash.

It is no uncommon thing for a large swarm to cluster on two separate branches close together, having the appearance of two separate swarms, when in reality there is but one.

It looks as if that were the case with your swarm, as all the bees preferred the one hive, the one with their queen probably. Still it may be that you

A Michigan Girl in Cuba.

know that they were two separate swarms—bees often do freakish things. In that case, one of the queens would be killed as soon as they united.

1. If there is brood in both stories, she may be in either story. If in only one story she will be with the brood.

2. Yes, but one part will be queenless. By looking for eggs after three or four days you can tell which is the queenless one (there will be no eggs in that one), then a queen may be given, or, if you prefer, you may let them rear one for themselves. Instead of killing part of your colonies better unite.

3. Yes, even if it is somewhat candied.
4. Any time after bees are flying freely in the spring.
5. No, unless the honey is burned in heating, then it would be unwholesome for winter stores.
6. Yes, pollen is gathered from the flowers, and after stored in the hives it is called either pollen or bee-bread.

7. When honey mixed with bee-bread is heated the flavor of the honey is likely to be affected—the greater the heat the more the honey will be affected.

The best way is to extract the honey. If this is not possible, the combs may be broken up and the honey strained out through cheese-cloth.

Yes, it takes all sorts of folks to make a world, and some are surely odd.

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Queen-Rearing in Cuba

Although rather disappointed in the two pictures enclosed, I am sending them on account of the luck I had with the batch of queen-cells shown therein. The picture is taken in an orange grove, where I have my queen-rearing outfit. At 10 o'clock a.m. I removed the brood-chamber of a strong colony to a new location, leaving the honey super on the old stand, from which one frame was removed, and the frame inserted as shown in the photograph, with 28 empty cells made of pure wax, by dipping a rounded stick in it while melted, and repeating this dipping and cooling until you get just what is wanted.

In the evening these cells were grafted without royal jelly, and for the first and only time, with me, the entire 28 were accepted and sealed. The morning that the last one was capped over, a visitor happening along wished to see the cells, and the first thing I saw, on removing the frame, was a queen dodging around among the cells, and one cell torn open. I thought I recognized the queen as coming from another hive, and sure enough it was the same lady. She was a young queen, and had been laying nicely for about a week, and had plenty of honey in her home, so why she should leave it I do not know. She was captured and dropped into a queenless colony, was accepted, and is still there doing good work.

The frame was then photographed as shown, and afterward the one cell regrafted and accepted. Taking the finding of the queen just when I did, together with the number of ripe cells I got from this batch, I think the whole operation is my luckiest. In trying to have the queen, mother of the larvæ in the cells, shown in the photograph, most of the bees were driven from the frame the lady is holding, and even then it is impossible to pick her, without knowing just where she is. The lady is a Michigan girl, and it was her first association with bees — some nerve, hey!

D. W. Millar.

Yes, the lady surely does show nerve to sit quietly without sign of veil or gloves while her picture is being taken. Is it not possible that this is at least partly owing to her confidence in the man who stands close by?

Even though the scene be laid in far away Cuba, a home touch is given to it by that copy of the American Bee Journal on her lap.

FAR WESTERN BEE-KEEPING

Conducted by Wesley Foster, Boulder, Colo.

Spraying and Bees

The bee-keeping industry has been seriously injured in nearly all the commercial fruit districts of Colorado the past season. In the Canon City district the loss was the greatest on account of the fruit men spraying during full bloom for the leaf roller. Somewhere from 600 to a 1000 colonies and their increase were destroyed, as well as the honey crop.

The effect on the bee-industry will be to drive the bee-keepers out to the alfalfa districts. The losses from spraying were so general this year in all the fruit sections of Colorado that bee-keeping was a loss to those engaged in it.

It is possible to move the bees three or four miles away from the orchards during bloom and bring them back for alfalfa bloom, if alfalfa is not grown for a cover crop in the orchards, in which case the later sprays will poison the bloom beneath the trees. This can be remedied by cutting the alfalfa or clover before blooming. It is practically impossible to get all to do this, however, and I have recommended for all bee-keepers to leave the fruit districts.

The effect on the fruit crop will be revealed later. It is probably true that other insects do some of the cross fertilizing, but where thousands of acres of orchards are grown, the bees are most necessary. It is my opinion that fruit-men and bee-men will have to get together, and I hope they will soon.

The bee-men secured a law several years ago forbidding the spraying of fruit trees while in bloom with any substance injurious to bees, but the fruit-men seem to resent this, and the clause in the law was changed so the bee-men have no protection except to move out of flight range of the orchards.

Spraying fruit during full bloom is

the most destructive to bees; colonies being wiped out in a very few days. The spray falling on blooming clover seems to act more slowly, some colonies not dying until early fall.

Surplus Combs of Pollen

The average bee-keeper will put away a generous number of well-filled combs of honey for supplying colonies that may become short of stores during the spring months. But does the average bee-keeper realize that pollen is as necessary (if not more so in certain localities) as honey? And why do not bee-keepers store surplus combs filled with pollen? Partly because they do not understand the conditions which cause the bees to fill their combs with pollen.

At the present time I can think of but two distinct conditions under which the bees store combs of pollen. A large colony rendered queenless will do it for lack of brood to use it.

Did you ever notice that a colony operated for extracted honey, with more chambers added above than the bees can fill, will store great quantities of pollen in the lower hive? What we need in this year of 1913, is more thorough experimental work along this line. The bee-keeper who derives his livelihood from the honey sold cannot do experimental work as satisfactorily as specially trained men. We must get the spirit of progress, so evident among farming operations, injected into the ranks of the bee-keeping fraternity.

Disinfectant for Foul Brood—Inspection

As the laws relative to inspection of bees, etc., say that the inspector or party handling diseased material must disinfect clothing, tools, etc., what do you use? What is the method of using?

What is your method of treating foul brood?

What time of year is best for first inspection, second inspection, and is a third one necessary in one season? T. D. SAFFEL.

Farmington, New Mexico.

A weak solution of carbolic acid has been used by many inspectors as a disinfectant. Its efficiency lies only in the washing away of any honey that may adhere to the hands, clothing, or hive tools. The odor of carbolic acid is disagreeable to bees and to people alike, and that might keep the bees from working on hive tools, etc., that have been washed in this solution. The best disinfectant is plenty of soap and water for the hands and hive tools, not forgetting to see that no spots of honey on the clothing are missed by the soap and water.

My treatment of foul brood is governed by conditions. I have used the single shake upon starters, and the double shake upon drawn comb with success. I have not practiced saving the brood as much as some do, because of the danger of starting robbing. The average small bee-keeper cannot be trusted with the brood-saving process at all. And many of the so-called practical bee-men spread foul brood among their own and their neighbors' bees by the same process.

Most colonies that were ordered to be treated this past season have been either shaken once or twice, the old combs burned, and the hives burned out with coal oil.

The first inspection can best be done in April or May. This depends largely upon local conditions and season. There should be considerable brood in the hive, say five or six combs, so that if the disease is present it will have shown up. After ten days to two weeks a second inspection should be made to see if directions for treatment have been carried out. A third inspection may be needed late in the summer in a few cases, if there is a large percentage of diseased colonies in the locality. This will depend greatly upon local conditions.

You, as an inspector, will find that the spread of the disease can be largely prevented by visiting the apiaries in the fall, winter, and spring for a superficial inspection to determine whether colonies weak or dead from the disease are exposed to robbers. The combs need not be lifted or the clusters of bees disturbed, but much good may be done by caring for the disease at this critical time, and before robbing occurs.

The Apiary, Par-Excellence

The writer has visited a thousand apiaries, and four come to his mind as being worthy of admittance to the model class. Without hesitation or mental reservation, I will say that the "Apiary Babberger" is the prize taker of the four in the model class.

Mr. Wm. Babberger, the creator of this little *honey garden*, is a German artist-photographer. He has the artistic temperament to the extent that he is uncompromising in his denunciation of low bee-culture ideals. He would say, as did Whistler, when a pot-boile artist excused his cheap work by complaining, "Well, a man must live.' Whistler replied, "Not necessarily."

Mr. Babberger would say, "If you cannot feed the artistic side of your nature as well as your body by bee-culture, better quit the bees." Pleasure must flow from all he does, or he will not do it long. Old world folks live a richer, fuller life than do we hurried, practical Americans.

If you could have taken supper with Mr. and Mrs. Babberger and "bûbschen," as it was my pleasure not long ago, you would have realized as I did the beauty of just common things. The delight in plants, and shrubs, and flowers is one of Mr. Babberger's characteristics. It is a little Dutch garden that encloses his honey garden, and is all that one could wish along this line.

From 25 to 45 colonies make up the apiary. One season he harvested 2300 4x5 sections from 25 colonies. Glass panes are used for inner covers, and Mr. Babberger likes them very much. He says very few are broken, and they require cleaning but once in two years.

A goodly number of Canon City residents have become interested in bees through admiring this little garden of delight. All indoor workers can imagine the pleasure Mr. Babberger takes in this opportunity for outdoor exercise among his bees and in his garden.

When Dr. Phillips was in Canon City about a year ago, the Fremont county bee-men met him in Mr. Babberger's studio. Mr. Babberger had a pile of his honey in the center of the studio, and any one could see that he took as much pride in the excellency of his honey as in the artistry of his photographs.

SOUTHERN BEEDOM

Conducted by LOUIS H. SCHOLL, New Braunfels, Tex.

Bur and Brace Combs

There is a diversity of opinion regarding bur combs, some bee-keepers claiming that they are of considerable value in causing the bees to enter the supers more readily. It is also argued that they are valuable as ladders for the bees while storing in the surplus boxes above the brood-chamber.

On the other hand, they are "a nuisance" in the minds of probably the majority of progressive bee-keepers. When frames are handled a great deal, these brace-combs not only hold them together and make them difficult to handle, but result in smashing many a valuable bee. On this account alone bur or brace combs should not be tolerated. Another objection is that they help to cut off the communication from one story of the hive to another, materially interfering with the storage of honey in the supers, and crowding the brood-nest with honey at the expense of the supers above. This is a serious question since it not only concerns the loss of surplus in the supers, but also that loss due to the weak condition of the colonies as a consequence of the queen being crowded out of egg-laying room. This is of the utmost importance where late flows may be obtained, or with colonies going into winter quarters under these conditions. Such colonies, although they have packed their brood-nest full of honey, are weak in bees, as a rule, and these bees are old ones.

This is contrary to our idea of the conditions necessary for wintering safely, and especially for building them up promptly for early honey-flows. To obtain the best results in this direction there are none better than colonies that have been able to rear a large quantity of healthy brood late in the fall. This insures a lot of young bees that will live well into the following season, when, really, bee-life is the most valuable. Each bee in early spring is worth several later on, as they are most needed in early brood-rearing and the building up of colonies.

The following letter is in line for just such information:

"*Dear Sir:*—Please let me know through either of the three bee journals of the United States, what success you have had with your *Scholl shallow extracting* and *brood frames* as regards *bur* and *brace combs.* Are you troubled any with these, especially with your frames with top-bars, ¾-inch wide and ½-inch thick? How do you overcome this difficulty? Please give us an article on bur and brace combs in *divisible brood-chamber hives;* also in *deep hives*, as this is a great trouble where one has to *change frames* from one hive to another. Do you think a thick top-bar, ¾ or ⅞ inch, will overcome this trouble? Do you find these bur and brace combs in frames only ¼ or ⅜ inch thick by ¾ or ⅞ inch wide?

"I wish you would have all your divisible brood-chamber articles in pamphlet form like Doolittle's book, 'A Year's Work in an Out-Apiary.'"

WM. P. FRITZ.

Canastota, N. Y., Nov. 25.

What is the cause of bur combs? A crowded condition of the hive, or, in other words, a lack of room. However, they are also constructed during the time of scant nectar supply, when the flow is not sufficient for good super work. Another cause may be improper spacing of the frames, either too wide or too close spaces, which the bees fill up with combs. My experience has taught me that the most accurately-made hives give the best satisfaction in the matter of bur combs and ease of handling.

Remembering, as a first precaution, that a crowded condition results in the most bur combs, we must try to prevent such a condition. By paying close attention to the colonies, providing the necessary amount of room, and keeping the bees busy and contented, the trouble may be obviated to a great extent.

Another thing that should receive more attention is proper "spring cleaning" of the hives. At this time the frames should be scraped clean of the small bur and brace combs that may have been started. This provides nice, clean frames for each manipulation throughout the busy season, and prevents the bees adding to and enlarging those that had already been begun. With a properly constructed hive-scraping tool this work is not difficult, when it is done before the colonies have become populous in the very early spring. At this time, too, the combs are light in honey, and brittle. They are sticky, and harder to clean off later.

We have not had any trouble with the ½-inch thick by ⅜-inch wide top-bars of our shallow frames, with the proper manipulations of the colonies as suggested. Far more trouble have we had with the thinner, flat, wide, top-bar shallow frames. The most trouble is given by the old style all-wood frames with very thin ¼-inch thick and ¾-inch wide top-bars. Thick top-bars ¾-inch thick and 1⅛ inches wide are to be recommended for deep frames, but these are too thick and heavy, as well as too expensive for shallow frames. The ½-inch thick top-bar, ⅞-inch wide Hoffman self-spacing frame, otherwise known as the Scholl shallow frame, has given us the best all-around satisfaction.

We believe most emphatically in providing as much free communication between the various stories of the hive as can probably be obtained by cutting down the width of the top-bars, but being careful not to go to the other extreme of getting them too narrow or too thin. This ensures better super work, and a consequent larger yield of surplus honey.

Having been asked by dozens of bee-keeping friends for information, in pamphlet form or in book form, on the subject of divisible brood-chamber hives, I have already made the beginning of such a work, which will come out some time this year.

"Buying Cheap Goods to Save Money is Like Stopping the Clock to Save Time"
It Pays to Buy LEWIS BEEWARE—Always the Same—Always Standard
Send for Annual Catalog which will tell you who is your nearest Distributer.
G. B. Lewis Company, Watertown, Wis.

BEE-KEEPING IN DIXIE

Conducted by J. J. WILDER, Cordele, Ga.

Danger from Bees

This is the best time of the season to move bees from one location to another. Bees, if not properly packed and handled, are very dangerous, yet some people are very careless with them, or around them, and each season has its victims from the stings of bees.

A beggar went to the back-door of one of our Dixie bee-keepers the past season and asked for a lunch. While it was prepared he removed the cover of a near-by hive of bees and was stung to death before he could get away. D. B. Badgeley, a wealthy farmer near Parkersburg, W. Va., was stung to death by a swarm of bees last June.

Mrs. R. W. Herlong, of Fort White, Fla., had a mare and colt stung to death the past season, and several members of the family barely escaped death at the same time. The colt and mare were grazing in the apiary, and in some way upset a colony. The bees attacked them, and in their effort to escape they upset 5 more colonies. Not only were the horses stung to death, but the furious bees took possession of the entire town until night. It was stated the next morning that there were a half bushel of dead bees on the ground around the animals.

One man who had to take refuge between the corn and fodder in a crib near by, said that he could hear the rats running through the corn below him squealing from the effects of stings.

That tragedy will never be forgotten by the people of the town. If bees cannot be securely prepared for moving by some one who has had experience, they should by all means be moved at night. I have had much experience moving bees, and on several occasions, in spite of my care, I have had narrow escapes from accidents.

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Timely Suggestions

The bees have now begun their winter sleep, and seemingly their quarters are as destitute of living objects as cemeteries. It makes me lonesome to visit their quarters, where only a few weeks ago there was so much activity. But only a few weeks more and we will witness the same.

While we rest as they do, we should formulate plans, get familiar with other bee-keepers' methods, make large deposits in our bank of bee-keeping knowledge, so that during the busy season next year we may draw heavily from it. Do all the necessary moving of bees, and the establishing of outer apiaries, building of honey-houses, work-shops, etc. Then, too, make a list of the bee-supplies needed for next season, and get them in readiness. It will lighten the rush which is sure to come later.

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Happy New Year

As it is customary to offer New Year's greetings, I now fall in line and wish a happy and prosperous New Year to every bee-keeper in Dixie, as well as to our other readers. If I could say the word or do the thing that would cause the mantle of prosperity to fall on every one, I would do it, but it is beyond my grasp, dear reader. However, it is within your reach, and it is just whether you will try or not. The old adage is true, "Where there is a will there is a way." We need men in our business who have a fixed will to do things and succeed.

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Back to Florida

It is now the first of December, and I am getting ready to go to Bradentown, Fla., for the winter, where I hope to catch up with my hunting and fishing, so that when I return next spring I will be ready for the busy season. This season has been my busiest one, and I have had no vacation. I am not mentally nor physically broken down, but I stand in need of rest, and I look forward to a change with happy anticipation. I don't expect to be idle during my stay in Florida, for I will have lots of writing to do aside from my correspondence, as I expect to write on extensive bee-culture, and cover a broader field than any writer has ever before covered.

I have operated a large number of apiaries for years, and during the past season I ran the number up to 40, consisting of over 2000 colonies. The future seems much brighter to me than the past, and I am looking forward to where my apiaries may number nearly 100. I expect to write solely from the standpoint of extensiveness.

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Chunk Honey—8 or 10 Frame Hives

"MR. WILDER:—I think I would like to produce chunk honey, for it appeals to me as being the cheapest way to produce comb honey. What size of hives do you use? I am thinking of changing from the 8 to the 10 frame hive. Do you think this would be advisable?" J. WADE DICKSON.
Westminister, S. C.

There is nothing like trying a thing out and settling it for yourself. If you run a part of your bees for chunk honey and a part for comb honey in sections, you could not go very far wrong. But I believe that where these two methods of producing honey are tested side by side, the former will win; especially is this true where a bee-keeper produces honey mostly for his own use and the near-by market, because he can leave it on the hives and remove it as he sells it. Then, too, it is not so troublesome to produce, and more of it can be produced by the same number of colonies.

But if comb honey is produced for a distant market, section comb honey would be the best. Comb honey in 1-pound sections is known on all the markets. It will not granulate so soon as chunk honey. In fact, it does not granulate at all on our southern market, and this is a very strong point in its favor.

Almost all of the honey produced in the South granulates too early, or before it can be consumed, and usually a lot of it is left over at the end of the season. This, of course, is detrimental to its sale.

Now about the 8 or 10 frame hives. I use the 8-frame hives, because a single story furnishes sufficient brood-nest for the bees in many of my apiaries, where brood-rearing is never at a very great pitch, owing to certain conditions which always prevail. The 8-frame single-story hive with a shallow extracting super makes a more ideal brood-nest, and one that can be examined better and quicker. Even if the 10-frame hive gave a better brood-nest, I could not get the first frame out or the last one in as quickly. The hive is just too small for so many frames, and this reason alone would prohibit my adopting it. No doubt in some locations, especially where the main honey-flow is short and heavy, and by the methods of some bee-keepers, the 10-frame hive is the best, but I doubt if it would be advisable to change from one size of hive to another, and in many cases it would be too much of a "mix up" to adopt both.

[Friend Wilder's statement that the 10-frame hive is "just too small for so many frames," and that he cannot "get the first frame out or the last one in as quickly" with the 10-frame hive as with the 8-frame does not appeal to us. Properly made hives should have the same space, *per frame*, whether they are 12-frame hives or 6-frame. His lightning methods of handling bees, and his bee-keeping by proxy may make the 8-frame hive more desirable to him However, we would like to hear from him whether he does not have more swarms and smaller ones from the 8-frame than from the 10-frame. We have always considered the 10-frame hive as scanty enough, and our experience is that a colony in a 10-frame hive will fill its wide super as quickly as the 8-frame super will be filled by the colony in a smaller hive.—EDITOR.]

MR. WILDER AMONGST THE ORANGES.

CANADIAN BEEDOM

Conducted by J. L. BYER, Mt. Joy, Ontario.

Alfred Pike's Record Crop

"What is believed to be a record yield in alsike clover in York county, and probably in the Province of Ontario, has been grown and harvested on the farm of Alfred Pike, of Box Grove, in Markham township From 7½ acres of land, Mr. Pike has thrashed 66½ bushels of uncleaned clover seed. This was sold to a city firm at $11 a bushel, or $731 for the whole lot, or nearly $100 an acre. The average price of farm land in Markham township does not reach that amount, and the one crop would pay for the land and leave a small margin over. Mr. Pike is a successful farmer, but the yield and the prices quoted will probably stand as a record for some time."

The gentleman referred to in this clipping is well known to the writer, and the facts given are beyond question. Some few years ago, while we were still on the farm, we thrashed 100 bushels from 10 acres, but the price at that time was about $6.00 per bushel. Yield and price combined, it certainly looks like a record breaker, as it has been a long time since alsike reached $11 a bushel. One of my apiaries was in reach of that field of alsike, and for some reason that yard gave me the highest average of any this season. Alsike certainly pays the farmer as well as the bee-keeper, even if yields and prices are not apt to be on a par with the example under consideration.

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Experiences as a Foul Brood Inspector

Mr. J. E. Crane, of Vermont, well known to the fraternity all over the continent, is writing for Gleanings in Bee Culture some experiences encountered while acting as foul brood inspector in his State. Many of his reminiscences are of a humorist nature, and have to do with queer hives, frames and fixtures. The writer of these notes has traveled around on inspection work for four years, and met with many experiences like those that Mr. Crane tells about.

When reading Mr. Crane's last article, one of the *best things* that happened while I was at the work came to my mind. A certain section was badly infected with foul brood, nearly every apiary visited being diseased within a radius of seven or eight miles from where we believed it had spread. A bee-keeper of the neighborhood was taking me around. He was a splendid fellow in every respect, much afraid of offending any one, and in great fear of taking me to some place where there might be danger of not being well received. After we had about covered the district, I asked him if he knew of any more bees in the community that might be infected. He replied rather hesitatingly that about five miles away a hotel-keeper lived who had about 40 colonies in box-hives, and that he had threatened what he would do to anybody "that would come around and fool with his bees."

While my friend naturally wished to know if disease was in the apiary, he questioned whether we had better bother with him, as the man had the reputation of being a fighter. To make a long story short, he was afraid that the inspector, being a little fellow, might get hurt. I jokingly told my friend that the dog that barked the loudest was generally the slowest to bite, and assured him that we would go to the place at once. As we drove up to the hotel, about a dozen men were standing around. Before my friend had introduced the proprietor to me, I had picked him out. He was a typical saloon man, very portly, and with a cigar in the corner of his mouth. After my being introduced as "the inspector sent out by the Government to inspect bees," he was cordiality personified in his manner towards me, and I was assured that it gave him the greatest pleasure to have me call, and he would at once show me his apiary. I suspected a joke, as I noticed a rather peculiar smile on his face, when he spoke of his "apiary." He took me behind the hotel. What a sight met my eyes! Forty or more boxes, not *hives*, were standing on scantling, with a few auger holes in the tops of most of them, over the strongest of which were placed a few sections as an invitation to go above and work. I looked at the outfit, and he looked at me, a huge grin covering his face as he remarked, "Now go ahead and inspect the bees, will you?"

About one-third of the colonies had died during the winter, and as this was in May, the moths had not yet destroyed the combs. I asked him what he was going to do with these boxes of combs in which the bees had died. And he said, "Nothing, do as you like with them." The bottom-boards were loose; in fact, the boxes were sitting on old planks, so I at once upturned them and thoroughly examined all of the combs, breaking them out to do so. As dead bees were all through the yard, not one of the hives examined showing a foul brood scale, I did not care to look into the hives that had living bees in them, and told him so. With a still more expansive smile, he told me that he wanted his *bees* examined—the combs of the dead colonies would be melted up anyway, and it was the *bees* he was particular about. Of course, the joke on his part was in the thought that the said bees, located as they were, could not be examined.

I replied that it would give me great pleasure to abide by his wish; in fact, I would be more satisfied myself to examine *every* colony for him. Imagine his surprise when I blew smoke in at the entrance of the first hive in the row, gave the hive a rap or two, and then upturned it. The combs were spread apart, and one with brood was taken out of the center of the brood-nest. The bees were pure blacks, and as all know who have handled them, they will, especially early in the season, stampede when thoroughly frightened. As I wore no veil, and received no stings, I kept turning one hive over after another as if in love with the job, and the look on my hotel friend's face can better be imagined than described. Before I was through, he shouted from the far corner of the yard, "You'll do old man," and there was something said about "come in and have a drink." Neither my friend nor myself accepted the invitation, as both were on the "water wagon."

Coal Cinders

Coal cinders in front of hives (page 361). It is a good idea, and a cheap way of solving a difficulty encountered by any one who has out-yards situated on very rich soil, where the grass grows provokingly fast when the bee-keeper is so rushed with work that he hates to stop and swing the scythe or run the lawn mower. Then, unless the work is done early in the morning, the operator gets a hot reception, for nothing angers bees more than to go among them in the daytime swinging a scythe, and once in a while giving a hive a whack with the end of the same.

In many localities coal cinders can be had in any quantity, and I hope to try this plan myself next season, in at least one yard. I have tried salt, and while it kills the grass, it takes a large quantity to properly fix a large apiary, at some cost, while the coal cinders can be had for nothing.

Pollen and Weight of Hives for Winter

Miss Wilson speaks of combs being filled with pollen, and says that when this is the case hives weighing 50 pounds are none to heavy (page 362). That weight is none too heavy, even if there was no unusual amount of pollen present, but the purpose of this comment is not so much to criticise her estimate as to emphasize the fact that often colonies starve by reason of the owners failing to remember that heavy combs of pollen are not "winter stores." A colony that has all new combs, and consequently little pollen in them, may often weigh much less than another colony with old combs and a great amount of pollen.

The beginner often does not understand this, and when he lifts the hives he may pass the heavy hive and be a a bit doubtful about the lighter, only to find in the spring that his "heavy" colony is either dead or suffering with dysentery, while the "light" colony will be in fine shape and have stores left. Even old timers are sometimes fooled on this question, and in this northern section I doubt if anything causes so much winter losses as allowing colonies to go into winter quarters with heavy combs of pollen in the brood-nest.

The Short Course in Bee-Keeping

The Provincial Short Course in Bee-Keeping, to be held in Guelph at the Ontario Agricultural College on Jan. 7 to 18, 1913, bids fair to out-distance all previous efforts in this direction. In a draft of the program sent me recently, I notice the names of several friends from over the line who are to take part in the lectures and demonstrations. Among them are Tyrrell, House, Clark and others. From Ontario a number of our well-known men are billed also. For the last two days of the gathering enough might be present to have an old-time convention. I think Mr. Pettit has something of that nature in view by the way he has arranged the program. Information can be obtained by writing Mr. Pettit at the Agricultural College, Guelph, Ont.

Feeding Sugar Dry

A controversy is taking place between Editor Root and A. C. Miller as to the qualities of a certain sugar, known variously to the trade as "A," "Coffee A," "Coffee," and "Empire A." Mr. Miller has proven that the bees can use this sugar even when not a bit of water is mixed with it. Can this sugar be obtained in Ontario? While we do not anticipate using much of it, what a boon it would be for early spring if a colony was found short of stores. Place the sugar so the bees could get at it, and the work would be done—no danger of chilling the brood, to say nothing of the danger of feeding liquid food early in the spring, during times of inclement weather. I want to know more about this sugar as soon as possible.

The Weather in Ontario

On Nov. 21, our bees in York county had a good flight, and a little pollen was brought in by some colonies from scattered dandelion that were still in bloom in sheltered locations. Pollen at so late a date is a record for "our locality," and such a condition is not likely to be duplicated for years. Since then the bees have had no flight, but the weather has been milder than usual for this season of the year, until today (Dec. 12) we are having wintery weather, the thermometer getting down near zero. We have had almost no snow in this section, but north and east of us quite a lot of the beautiful has fallen.

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MEMBERS IN ATTENDANCE AT IOWA BEE KEEPERS' MEETING.

1. G W. Fehleisen, 2. B. A. Aldrich, 3. J. S. Myers, 4 A D. Clancy, 5. J. C. Donahue, 6. M M. Bruner, 7. B. H. Tripp, 8. G. W. Nance, 9. J. P. Bl k, 10. L. M. Carlson, 11. W. S Pangburn, 12 J. W. Stine, 13. J. B. Espy, 14. W. H Winch, 15. J. H. Schweer, 16. J. C. Stocks, 17. Arthur Wright, 18. W. H. Pearson, 19 J. F. Diemer, 20. Mrs. E. C. Wheeler, 21. Miss Nina Secor, 22. E. E. Townsend, 23. R. Grantham, 24 J. H. Burghduff, 25. A. F. Bonney, 26. E C. Wheeler, 27. Eugene Secor, 28. S. W Snyder. 29. Frank C. Pellett, 30. J. L. Strong, 31. M. G. Dadant, 3 W. Hall, 33. Hamlin B. Miller, 34. ——, 35. F. C. Scranton.

CONVENTION PROCEEDINGS

Ontario Meeting

BY J. L. BYER.

The Annual Convention of the Ontario Bee-Keepers Association, was held as per schedule, in Toronto, on Nov. 13, 14 and 15. The first session opened with a full house, our efficient President Mr. Denis Nolan, occupying the Chair. Aside from the number of Ontario bee-keepers present, both men and women, the latter more in evidence than usual, we had a splendid representation from "over the line" among whom we will mention the editor of this Journal. Mr. and Mrs. House and another lady, whose name I cannot recall, from Camillus, N. Y., Mr. and Mrs. Clark of Borodino, N. Y., and our old friend who is as much a Canadian as a Yankee, Mr. Hershiser of Buffalo.

The President in his opening address referred to the fact that in many parts of Ontario the crop had not been good during the last season, but to offset this the demand for honey was very keen and prices very good. In a few of the western counties of the Province the crop had been very heavy, and in these favored localities the bee-keeper had reaped a rich harvest. The grant from the Government had been increased, and judging from the attitude of the Department, it looked as if we could get help from there whenever it was needed. This year for the first time the Association had put up a collective exhibit at the Horticultural Show, which was in progress at the time of the meeting. Owing to the urgent demand for honey, many apiarists had sold all their crop quite early, and as a result it was hard to get as much honey for this exhibit as was desirable; nevertheless, the exhibit was very creditable indeed, as the President declared, this being the first attempt in that line of work.

Only one County had placed an exhibit—namely Middlesex, it being among the fortunate ones in securing a good crop this year. Their exhibit was a credit to the County and to the people who did the work of gathering the goods and arranging such a tasty display of the products of the hive. Middlesex County has a splendid record for bee-keeping, and has the men and women who know how to take advantage of the opportunities that nature has put in their reach in the way of securing large quantities of as delicious honey as is produced in any country in the world.

Mr. Tyrrell of Detroit, Editor of the Review, was unable to be present to the great regret of all of us, but in his absence he did the next best thing and sent splendid papers bearing on the subjects that had been allotted to him, namely: "Improved methods of selling honey," and "Problems confronting the National."

The paper on selling honey was especially good, and I regret that it is too lengthy to appear in a short synopsis like this article. The qualities of a salesman are not acquired in a day, any more than man can be a good bee-keeper without special preparation. As the paper pointed out many good bee-keepers are very poor salesmen, and here came a good point in favor of organization for disposing of the bulk of the honey crop. Good salesmen must be neat in appearance, able to talk convincingly and enthusiastically about the wares they are representing, but it does not pay to exaggerate or make claims that cannot be substantiated by the goods. As an illustration in the methods of soliciting a sale as compared with an effort rather to discourage than buy. Mr. Tyrrell mentioned how one clerk will say after a purchase has been made:—

"Nothing else that you want?" while another would say "Here is a nice article that you need" or words to that effect. Generally speaking the man who adopts the latter method will be the better salesman.

In his paper on the problems of the National, Mr. Tyrrell gave a thorough history of the Association for a number of years, stating the reasons that led up to the change of constitution as it is at present.

At the close of the discussion the feeling of the meeting seemed to be adverse to the Ontario Association becoming a branch of the National and accordingly no steps were taken to that end. While as a matter of sentiment many would like to affiliate with the National, it was felt that as a matter of business there was nothing to be gained by taking the step under discussion. One minor objection raised was that the name, "National" is not appropriate for a society doing business in two countries.

At present everything in the bee-keeping line seems to be booming to such an extent over here that we imagine there are no difficulties to need serious consideration aside from the fight against European Foul Brood and in so far as that work is concerned, we have to depend on our government for financial assistance. The selling of honey and other kindred problems are not problems at all just now, as it is not a question of where we can sell honey, but rather how much we can supply. My own inclinations lead me to desire affiliation with the National, but this is a question of majority rule.

Mr. Morley Pettit, the Provincial Apiarist, gave an address on the Foul Brood Situation in Ontario. Briefly, he said that American Foul Brood is being held in check and in many localities is wiped out altogether. As to European Foul Brood, however, Mr. Pettit frankly gave it as his opinion that it would sweep all over the Province, no matter how much inspection was done. The only remedy known and advised is that all black colonies be italianized with a good vigorous strain of that race of bees. From what I can learn, good Carniolans are just as good to fight the disease, but owing to their color being somewhat like that of the black bees for beginners at least, it is much safer to italianize. The motto in regard to italianizing is "do it now" for most assuredly black bees go under in a hurry when this scourge strikes them. While there was a lot of discussion on this matter of European Foul Brood, for the first time in my remembrance, "starved brood' was not mentioned. One man who defended black bees last year, and has since gotten European Foul Brood among them said to me, "No one need ever suggest starved brood to me any more as the cause of this curse."

As the greater part of one session was devoted to the matter of running out apiaries with the aid of automobiles, one may be justified in thinking that bee-keeping has reached the most advanced stage of any period on record in Ontario. Mr. H. G. Sibbald, who is one of our most successful men, uses a Ford, five passenger car, and is highly pleased with this innovation. Seven or eight, who were present at the meeting, are also using motors in different types, and all seemed to think they were a paying investment, especially where one does not need to travel much in the winter.

Mr. Enos Farr, of Low Banks, uses a motor truck and carries extractor engine, etc., from one yard to another Mr. Chrysler of Chatham, and Mr. Miller of London, also use motor trucks, but they haul all the honey home to be extracted, having a large room at home with full equipment for rapid work. Both use a frame of the Heddon type, and it was pointed out that with loose hanging frames, the combs would get damaged in transit. Personally, while admitting that both friend Miller and Chrysler are making a success with their methods, if this scribbler had to adopt similar plans he would soon go out of business. On the other hand I feel sure that neither of them would consider for a moment the thought of keeping bees as I do so that what is good for one man is useless for another—a fact that would explain many differences of opinion not only in bee-keeping but all other callings as well. No doubt many are in the same position as myself in the possibility of adding an automobile equipment to our plans. I could not afford one if I wanted it **"real bad,"** which is not the case yet, and I am such a "botcher" with machinery that an engine to be satisfactory to me would have to be almost absolutely "fool-proof." Even if I had an auto, I would still be at the expense of a horse, as living in the country, we would need means of traveling in the winter months. Then during the past wet fall, at the time our feeding was done, some of the roads were so bad that an auto would not have served when it "ought to," and the horse would have had to be in service again. When I can afford an auto as a luxury, likely one will be bought—**that time** is a matter of conjecture, but as I consider the matter from a purely financial standpoint, old Dobbin will have to do our traveling for a few years yet.

J. E. Dunn gave an instructive talk on preparing bees for winter, and Mr. Harkness spoke from the standpoint of winter and spring management. One thing in which Mr. Harkness' method is out of the ordinary, and as a result created some discussion, is that he winters in the cellar, and before putting the bees inside, the regular cover is removed and a rim about two inches or more deep is set on the hive. Inside of this rim a sealed comb of honey is laid flat, and over all a few thicknesses of burlap. While he meets with good success by this plan yet to my mind he must have a perfect cellar, as in a cellar too cold there would be too much exposure of the bees prepared in that manner, when the bottom boards are also removed. The plan did not meet with much approval. The preparing of a large number of colonies in that way would mean a lot of "fussing." I would prefer having that extra amount of honey in the brood nest instead of on top of the frames. In connection with Mr. Harkness' address the usual discussion as to ventilation of bee cellars came up again, with the result, as viewed from an impartial standpoint, that fresh air, and lots of it, got the best of the bargain.

The Hon. James Duff, Minister of Agriculture for Ontario, addressed the meeting. He paid a splendid tribute to our esteemed President, Mr. Nolan and we bee-kepers appreciated Mr. Duff's kind words very much. Encouragement was given from the Department he represents and under which bee-keeping comes. With a President thoroughly in touch with the Minister in charge of this department, it seems likely for us to get any needed help. Bee-keeping as a business, in the eyes of the "powers that be" has made wonderful progress during the past few years and bids fair to keep up the pace for some years to come.

A. D. McIntosh, B. S. A., of Sterling, Ontario, told us what we can expect of the District Representatives: "Find out what you want and then ask for it." Mr. McIntosh gave ample assurance that in so far as he is concerned, the things asked for will be given to the extent that lies in the power of the District Representative.

Mr. J. W. Clark of Cainsville, the well known Buff Orpington man, gave a practical talk on Bees, Fruit and Poultry although Mr. Clark said that he would perfer the subject to be headed, Poultry, Fruit and Bees, yet he demonstrated that the right man could be very successful in all three lines combined, no matter in which order the callings were given preference.

Mr. Sladen of Ottawa, lately from England, gave a splendid paper on the subject of Bee-Breeding. Naturally, on a technical subject of this nature, an extensive synopsis is necessary, and as no notes were taken, readers of the Journal will have to wait until the paper is published in full, and it will no doubt be, at an early date. Officers for next year are almost the same as last year. The places of two Directors lately deceased, David Chalmers and Mr. Switzer were filled by other men Mr. Nolan of Newton Robinson, is re-elected president and Mr. Pettit, of Guelph College, is secretary in place of Mr. Hodgetts, who was overburdened with work. The usual resolutions were passed and the meeting adjourned to meet at the call of the Executive.

Engravings for Sale.

We are accumulating quite a large stock of bee-yard engravings and other pictures used from time to time in the American Bee Journal. No doubt many of them could be used by bee-keepers in their local newspapers, on their letterheads, on souvenir cards, or in other profitable or interesting ways. If we can sell them it will help us to pay for others that we are constantly having made and using in these columns.

We do not have a catalog or printed list of the engravings, but if you will let us know just which you want we will be pleased to quote you a very low price, postpaid. Just look through the copies of the Bee Journal and make your selection. Then write to us.

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HAMILTON, ILLINOIS.

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CONTRIBUTED ARTICLES

Outdoor Wintering

BY G. M. DOOLITTLE.

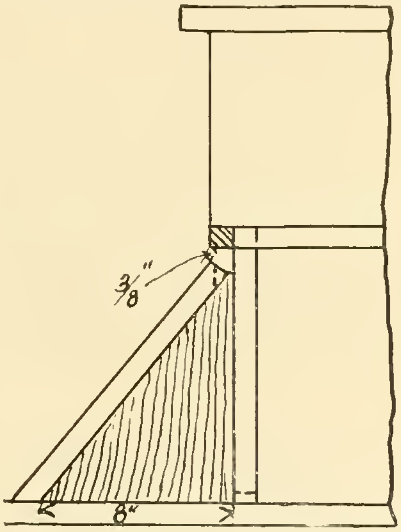
"I live in about 43 degrees north latitude, and have a cellar that I consider unfit for wintering bees. For the the last two winters I have lost heavily by trying to winter my bees therein, so I have concluded to leave them outside this winter. Will you please tell us something about the wintering of bees on the summer stands, as I see you live in about the same degree of latitude that I do. I also note that you often answer questions for different ones in the American Bee Journal."

While I am an advocate of cellar wintering of bees in this locality, and believe that there is a great saving in both stores and bees by so doing, yet if I did not have a cellar suitable for bees, and did not feel free to construct such a cellar, I should certainly winter them on the summer stands. In fact, we have those within 15 and 20 miles of where I reside, who claim that better results can be had by outdoor wintering than through cellaring, as brood-rearing is started from six weeks to two months earlier when the bees are wintered out than when in the cellar, and this early brood causes the colony to reach the flow of nectar from clover in a much stronger condition than when brood-rearing is started shortly before the bees are taken out of the cellar.

There is some truth in this, if the winters are not too severe, but when we have a winter like the last (that of 1911-12), when the bees did not fly after October, and had to exist through January and the most of February in a temperature of from zero to 25 degrees below a large share of the time, the most of this kind of "poetry" seems like idle talk to all who fail to properly protect their colonies left out. A slight protection may be all right for Ohio and Pennsylvania, but in this northern latitude the heat of the bees must be depended upon for warmth; hence the whole plan of wintering must be based on conserving their heat to the largest possible extent.

In my early days of bee-keeping there was a man wintering his colonies outdoors who was very successful, and I went to see him quite often. I remember that he placed special stress upon abundant protection. He said that many who thought their bees properly protected did not realize what true protection was. In those days many acres of timothy grass were saved for seed about here, as we could then raise it cheaper than they could in the West. In threshing this ripened grass for the seed, there was a large accumulation of chaff which was very fine, yet would "stand up" under moisture, keeping light and fluffy so that evaporation was very rapid instead of becoming wet, damp, and soggy as other chaff, especially that from oats.

He used 5 inches of this dry, fluffy chaff around the sides, back, and under the hives, with 8 inches of the same over the top, and between the chaff and the frames of the brood-nest were 2 to 4 thicknesses of old cloth cut the proper shape, from anything which had become valueless for further use in its original form. Over this chaff was a vacant space of 3 or 4 inches, then a roof over the whole hive to keep out the rain and snow. Cracks about one-sixteenth of an inch were left near the "gable ends" of this roof, so that the moisture never condensed on any of the inside parts in the shape of frost to melt during the sunshiny days of winter, and run into the packing, as is usually the case where no special means are provided for the escape of this moisture, which is thrown off by the bees to a greater or less extent in accordance with the amount of honey consumed. Where the weather is very cool, or drops to zero or below for any length of time, the bees consume much stores for "fuel," and with this increased consumption more moisture is thrown off, and in all ordinary ways of wintering this moisture condenses on the inside walls of the hive in the shape of frost, or in the packing where an inefficient amount is used.



Manner of Protecting the Entrance for Outdoor Wintering.

On the first mild day when the sun strikes the hive, this frost is turned into moisture, often of sufficient amount to run out at the entrance in the shape of water, or soak into the packing and make the bees uncomfortable during the rest of their confinement.

In addition to this packing and cover, the entrance of each hive was left quite large, and over it was a sort of vestibule or storm-door, made of a piece of board 8 inches wide, and as long as the front of the hive, up to the cleat on which the cover rested. This board was sawed from corner to corner, so that each of the two pieces made of it were at a point at the top end, which went under the cleat, and 8 inches wide at the bottom, resting on the alighting-board, which projected out that far in front of the entrance. On the slanting sides of these two pieces was nailed a board wide enough for the whole length of these slanting sides except ⅛ inch at the top, and long enough for the two uprights to be even with the sides of the hive.

In this way all rain, snow, and wind were excluded from the entrance, as the ⅛ inch, short at the top, came under the projecting cleat, excluding the storms and winds, while it gave plenty of pure air for the breathing of the bees. The packed and properly protected hive was so warm inside, and in the vestibule, that the bees could bring nearly all the dead bees, which died of old age, out on to the floor or on the alighting-board, and the dampness which usually collects where dead bees accumulate on the bottom-board of the hive was avoided. The objection to this vestibule is that when there comes a day warm enough for the bees to fly, it must be removed, or the bees will come out therein and worry themselves to death trying to get out.

But this man said that any of his family could do this were he not at home to attend to such removal himself, exceptionally. By nailing a strip on the cleat on which the cover rested, to give a downward projection of half an inch, this front board to the vestibule might be ⅜ of an inch narrower than the slanting uprights, and the bees would not be shut in, even if there were no one present when it was warm enough for a flight. This man was always successful in wintering his bees, and were I to go back to outdoor wintering, I should certainly try this plan.

Borodino, N. Y.

Freight Rates and Honey

BY B. F. SMITH, JR.

To a very large percent of the honey-producers a freight tariff and classification is something unknown. This statement is based upon instances like the following: A and B met at a convention, and B wanted some basswood honey for his own use, and asked his friend A to send him 100 pounds. As B wanted a cream can, A was to ship it in a new one. The honey came through in good shape, but the freight was $4.18 per 100 pounds because the can was not boxed; while if it had been boxed it would have been only $1.38. They both blamed the railroad.

In another case a farmer moved to a new locality and produced about 1000 pounds of comb honey, but as he had

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no market there, he wrote to a merchant in his old home town and made a sale of the entire lot at a certain price delivered. The shipment arrived in good condition, although the cases were not crated, but the rate was $3.00 per 100; while, if properly packed, it would have been $1.50 per 100 pounds. That man thinks the railroad stole $15.

I read a statement not long ago that "no one but suckers paid the first-class freight rate; because, if they knew how, they could get the article into a cheaper class." I have also heard a great many times that the rates were made as high as the traffic would stand, and while that statement at one time was well founded, it is not true today. The items that are taken into consideration today are weight, size, volume, liability to damage, liability to damaging other freight, equipment required, claims and value. It is not the large shipper, the man who packs his honey carefully and well, who tries to send it to his customers as cheaply as possible, who makes it hard to get a reduction in the honey-rates, but it is the little producer, who does not know how to pack his honey properly.

COMPARING RATES.

Comparing honey-rates with the rates on maple syrup is about as close a comparison as we can find. In car lots maple syrup is 5th class, while honey is 4th. Glycerine, another liquid, but worth a great deal more than honey, and I hardly think the volume is any greater when put into barrels, takes 4th class rate; linseed oil, 5th class; paints in oil, 5th class; syrups of fruit for soda fountains, 5th class. These articles compare with honey in value, weight, bulk, liability to damage, etc., yet all have a cheaper rate.

In looking over the tariffs of one company whose lines traverse Illinois, Iowa, Kansas, Nebraska, Missouri, Minnesota, Wisconsin, South Dakota, Wyoming, Montana and Colorado, and there is quite an amount of honey moved in those States, we find eight special commodity rates on syrups and molasses and one on honey. Seven exceptions to classification on syrups and none on honey.

What causes honey-rates to be higher than on other goods of like nature when put up in the same style package? Honey in glass is billed as 2d class, less than a carload; but crushed fruit, preserves and jellies in glass, 4th class. I once asked a claim clerk the cause of this, and his answer was: "Did you ever see crushed fruit or jellies packed like that?" pointing to a case of honey in Mason jars that was leaking all over the freight house. "Ninety percent of the jellies and crushed fruits that we handle are put up by packers who know their business, but you cannot say that of honey shippers." Just last week I saw a shipment of some 500 pounds of comb honey packed in old oil cases; some of the sections were flat and some on edge, with two or three thicknesses of newspaper for a cushion. Some in topless oil cans and cans set in cases. Cases marked with a lead pencil, and nothing to distinguish the top from the bottom.

Just such cases as this help to keep up the rate. It is scarcely believable the way some freight is offered for shipment, and I am sorry to say some of it is accepted; packages of considerable value wrapped in newspapers and tied with a light string, very fragile goods with hardly any protection.

Many do not realize the amount of business handled by the large companies. Walk into the shipping department of some large shipper and see what they send out daily. Then there are sometimes 50 or more of these large firms at one railway center. Your small shipment may go to the freight house with 20 dray loads of all kinds of freight, checked and receipted for on a platform, placed in the proper car, and also in the proper order in that car. A shipment from Chicago to States in the Rocky Mountains is transferred some two or three times *en route*.

PACKING.

Do not think that because a shipment is going by freight any old box will do. Some writer, not very long ago in one of our bee journals said: "Any old lumber would do for cases for extracted honey." Probably it would if it was just going a short distance without any transfer. Out of five shipments going about 900 miles, with three transfers, three arrived with damage to contents, and one with cans badly jammed. These cases were all built with new lumber, cement-coated nails, and well put up, but I know from handling some of my own cases that they are heavy, and it is very easy to break the case and not handle them very roughly either.

MARKING.

Practically all stations are supplied with marking pots and brushes. Tags should be avoided as much as possible. We receive a great many notices in this division that there is an "over" at a certain freight station without any marks of any kind, giving a description of the contents, and trying to locate the station to which it belongs. All old marks should be removed or blotted out, and agents and freight handlers are not supposed to mark your freight for you. During 1910 one express company accumulated 4395 pieces of express from which marks were gone, and for which they were unable to find owners. They probably paid for the most of them.

My only idea in writing this is that it may help the little producer to put his honey in shape so that when the National tries to get the rates to which we are entitled, the railroads will not be in a position to say, "We cannot give them on account of the large amount of damage we pay yearly on this article."

Cowley, Wyo.

An Easy Way of Getting Wax from Small Quantities of Comb

BY ARTHUR C. MILLER.

Wax rendering on a small scale, as experienced by the bee-keeper of a few colonies, is apt to prove such a sloppy, disagreeable job that it is often shunned after the first trial. The writer well recalls the attempt of one man to get the wax from about a bushel of old, black comb. His wife was away, fortunately, and after getting the fire going well in the kitchen stove, he put on the wash-boiler, half filled it with water, and as soon as it was hot he began putting in the comb. Soon he had a fine, black pudding, and he commenced bailing it out with the laundry dipper, and poured it through the best wire sieve into a nice, clean pail. It dripped on the stove and floor, clogged up the sieve, overflowed, and bedaubed everything he touched. After several hours of hard work, soaked with perspiration, tired and mad clear through, he had a few fragments of a nasty, black substance supposed to be wax.

The next two days were spent in cleaning up, and when his wife returned he had a most beautiful excuse for having bought sundry new household utensils. Now, if you want to get any old combs, just suggest to him that he extract the wax from them, and he will give them to you and then, "with a smile which is childlike and bland," he will softly open his most vicious colony, give it an accidental kick, and as you take a hurried departure you may wonder whether you really heard him say something or not.

But despite his opinions, it really is possible to render a small lot of comb easily and well. The first requisite is a convenient kettle to melt the comb in; the second, a boiler of water; the third, a wooden butter firkin or lard tub; and fourth, a strainer. The latter is a combination of a piece of chicken wire, inch mesh or less, and a piece of cheese-cloth.

The process is this: Fill the kettle half full of water, and as soon as it begins to boil put in the comb, adding a little at a time and stirring it in. When the kettle is nearly full, and the wax and water begin to boil, remove the kettle from the fire and pour the contents onto the strainer. The latter is adjusted in this manner: The wire-cloth is laid over the top of the lard tub and pushed down in the middle until it is basin-shaped; then four or fire wire nails or staples are driven in the edge of the tub to keep the wire from going in further. A piece of cheese-cloth is then spread over the wire-cloth, and the strainer is ready. The contents of the kettle are slowly poured onto this.

When the strainer is about level full it is allowed to drain for a few minutes, then boiling water is poured on, a dipperful at a time, and from time to

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time the mass is gently pressed with a flat stick or paddle. When most of the wax seems to be out (and really is if the water treatment is thorough), the cloth is picked up by the four corners and its contents dumped out, the cloth replaced, and the process continued with more from the kettle. The small amount of wax left in the refuse from the strainer is not worth the labor of recovering.

The larger the tub the more water can be used, and therefore the better the results. The kettle for melting the wax should be only so large as may be conveniently handled and poured from. And if the work is to be done in the kitchen, cover the floor with several thicknesses of newspaper and save trouble from any stray drops of wax. And *never* go out and leave the kettle of wax on the stove.

Refining the wax is merely a matter of remelting it and pouring it through finer and thicker cloth one or more times.

Providence, R. I.

Mr. Pellett's Son Investigating.

Can We Permanently Eliminate Foul Brood?

BY FRANK C. PELLETT,

Iowa State Inspector of Apiaries.

While the writer has not had a long experience as an inspector, it has become apparent that the elimination of bee-diseases is no easy matter. If all the people who keep bees were scientific in their methods as are most of the extensive bee-keepers, it would not be impossible. The practical bee-keeper, however, needs no inspector as far as he is personally concerned. Usually he has one or more neighbors who have a few colonies that must be transferred before it is possible to look into them. These same neighbors would not know foul brood if they saw it, and if they knew it was present would make no effort to rid themselves of the disease.

When the disease once presents itself in a locality the only way to get rid of it is to carefully examine every colony of bees far and near. In Iowa every eighth farmer keeps bees. This means that nearly 30,000 farmers must be looked after beside the thousands of town's people who are also bee-keepers. Foul brood is now known to be present in 32 counties, or about one-third of the State. In order to ensure a clean up it would be necessary to inspect all the bees within a radius of several miles of each diseased apiary. Very probably the disease is present in many localities where it is as yet unknown, for I think it is safe to say that not one bee-keeper in ten would recognize it.

Until we get different laws, we will continue to clean up one locality after another, only to have it break out again from some new source of contagion. Personally, I would advocate the passage of a law by the federal congress that would prohibit the shipment of bees from one State to another without a certificate of health signed by some duly recognized State or government inspector. Then we should have State laws similar in intent regarding the transportation of bees from one county to another. I have read the statement from N. E. France, that they have apparently accomplished the result of getting the disease all but stamped out of portions of Wisconsin only to have it reappear from this cause.

In Iowa the bee inspection is in the hands of a State Inspector whose office is separate from that of the State Entomologist. It seems to me that the better way is to place the work under the direction of the entomologist. In most States deputies from his office visit every county every year in connection with nursery inspection. It should be possible to secure men competent to do the work of both nursery and bee inspection. However, this plan could hardly be expected to work unless the State Entomologist had an assistant in apiculture who should devote his whole time to the development of bee-culture and teaching this subject during the school year. He would be directly responsible for the success of the inspection work, and would do a considerable part of it himself. In localities where the disease is present every colony of bees should be looked after until the disease is eradicated. This will require a lot of work, and it will be easier, in my opinion, to get a sufficient increase of the appropriation for the State Entomologist's office to support this additional work than to get a separate appropriation.

The Iowa law, at present, provides that not to exceed $1000, in any one year, shall be expended in bee-inspection. The amount is hopelessly insufficient to do the work needed where there are 30,000 bee-keepers scattered over 56,000 square miles of territory.

The bee-keeping industry in Iowa is of sufficient importance to justify an assistant in apiculture at the State Agricultural College, and the development of a school of bee-keeping together with regular short-course features in this same line. It seems to me that the bee-keepers of Iowa will find this the line of least resistance.

I would like to see the matter of laws relating to interstate shipment of bees, together with uniform inspection laws taken up and thoroughly thrashed out by the National Association at its coming session. It should also be determined whether it is not time to require bee-keepers shipping honey to produce a certificate of inspection. Dr. Phillips called attention some time ago to the fact that disease is being widely spread through interstate shipment of honey from diseased apiaries.

Atlantic, Iowa.

Uniting Bees

BY DR. C. C. MILLER.

In September American Bee Journal, page 273, appears an article on uniting bees in which I disclaimed the ability to write all that could be said upon the subject. That the article was not exhaustive is shown by the fact that a Tennessee correspondent asks for further light, mentioning specifically five different points.

First, the various methods of uniting, and the general principles underlying the same, I hardly know what I can add to what I have already given, page 273.

Second—What are the best times of

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Apiary of E. Vanderwerken, Stamford, Conn. "Of Uncouth Appearance But of Remarkable Efficiency.
(Photographed by Edward F. Bigelow, Arcadia: Sound Beach, Conn.)

the year to unite? That question may be considered from two different standpoints. Viewed from the side of the bees, it may be said that they will unite most kindly when honey is coming in freely, and that for more than one reason; honey is such a plentiful article that they are not suspicious that any one will want to steal it, so they are not in an aggressive attitude; robbing has not been going on, and they are not suspicious of strangers that may enter; they are so busy gathering and storing the precious liquid that they have not time to be on the lookout for intruders. This might be understood to mean that bees should be united only when storing a surplus, which would be a mistake.

In my locality there is gnerally no surplus stored until the flow from white clover. Yet almost any time before that, when bees are flying daily, they may be united just as well as in the clover harvest; for whether they are working on willows, maples, dandelions, or fruit bloom, even if they get only enough for their daily needs for brood-rearing, they are getting enough to keep them fully occupied. I suspect it is the older bees that do most of the fighting, and when there is no work a-field to occupy their minds they are on the lookout for anything unusual and inclined to resent it. The very worst time is probably just at the close the harvest, or indeed at any sudden stoppage of the harvest, for then the field-bees, suddenly stopped from their labors, are trying every entrance, crack and crevice, thus stirring up resistance to any intruder; and of course any added bees are intruders.

The question may also be considered, not with regard to the peacefulness of the bees in uniting, but with regard to the time most profitable for the bee-keeper. Generally two colonies are united because one or both are too weak to be continued profitably alone, and this uniting may be in the fall or in the spring. There is advantage in uniting in the fall instead of waiting until spring; because the united colony will consume less in wintering than the two separate colonies, and also because the united colony is more certain to live through the winter than the two separate.

Third—"In the spring, when you have all the colonies you want, and the bees will keep swarming in spite of all you can do, wouldn't it be good practice to put two or more of these swarms into one hive?" Yes, if you refer to prime swarms only. If you refer to after-swarms, then I must say I am skeptical about their issuing "in spite of all you can do." For you can take the plan so often given in these columns, putting the swarm on the old stand with the mother colony close beside it, and moving the old colony to a new stand some eight days later. And to the question whether in such a case there would be danger of all the queens being killed, I quote tradition as saying no, although I cannot quote from my own experience.

Fourth—If a swarm has been hived a week or more, another swarm will not be as likely to unite with it peaceably as when both swarms are hived on the same day. Still, they may unite peaceably even when a week apart. Neither is the uniting likely to be so successful when one swarm has a laying queen and the other a virgin as when both queens are of the same kind.

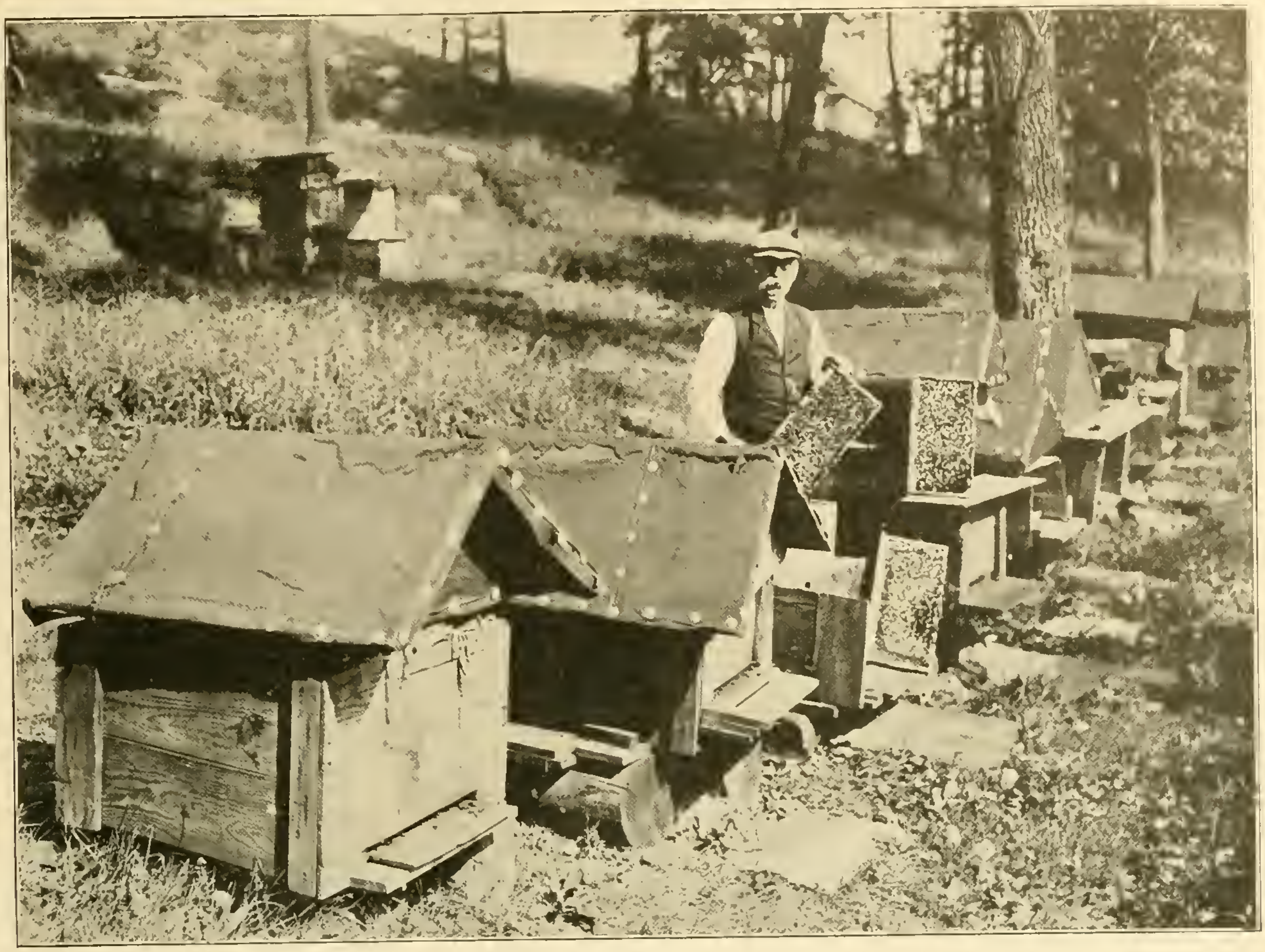
Fifth—I prefer the newspaper plan of uniting two colonies to any other, although it is not unlikely I may be a little partial to my own baby. For uniting swarms of the same kind issuing on the same day, of course there is no need of the trouble of the newspaper plan; just dump the two swarms into the same hive.

Marengo, Ill.

Put More Work into Fewer Bees

BY EDWARD F. BIGELOW.

This slogan, originated by the late Mr. Hutchinson, of Flint, Mich., is only partly right, and if accepted literally is, in my opinion, wholly erroneous. To keep more bees is the bee-keeper's



"AROUND HIS MODERN, WELL-PAINTED HIVES HE PUTS PROTECTIVE PACKING BOXES."—Photographed by Edward F. Bigelow.)

temptation and danger, unless he will do as Mr. E. Vanderwerken, of Stamford, Conn., does—put more work and thought into the bees themselves. In number of colonies, do not exceed the limit that can receive careful and continuous attention.

Mr. Vanderwerken's apiary of 22 colonies is the most efficient honey-producer for that number that I have ever seen. He has strong colonies, some of them 3 and 4 stories, full 10-frame dovetail hives. He has achieved success; first, by hard and persistent work, and secondly, by keeping the bees warm. His apiary is undoubtedly not intended as an example of spotless whiteness and neatness, but as an example of efficiency. Around his modern, well-painted hives he puts protective packing boxes, with leaves and paper clippings between the walls of the box and those of the hive. To cover the topmost hive he uses the ordinary ½-inch covering board; on that he piles a liberal heap of old carpets and bedquilts, and over these puts a roof on which he has tacked tar paper. He keeps the bees as carefully protected in the hottest weather as in the coldest winter.

Here, then, are two valuable suggestions: Put more work into your colonies, and keep the bees thoroughly warm during every minute in the year.

Arcadia, Sound Beach, Conn.

Isle of Wight Disease—A New Name for an Old Trouble

BY GEO. W. BULLAMORE.

The literature of bee-keeping in England shows that, from time to time, this country has been swept almost clear of bees. Writing in 1827, Bevan, in "The Honey-Bee," said:

"In the winter of 1782–3, a general mortality took place among the bees in this country, which was attributed to various causes; want of honey was not one of them; for in some hives considerable store was found, after the bees were gone. Some were of opinion that it arose from the preceding being a bad breeding year, and thought the bees died of old age. Others attributed it to the moistness of the spring of 1783, which rendered the providing of pollen difficult, for without pollen no brood can be reared. The difficulty of collecting pollen was ascribed to the continual closing of the flowers over the anthers, the want of sun to burst the anthers, and the washing away of the pollen by the frequent showers after they did burst. The fatal influence ascribed to the wetness of the spring of 1783 seems to be improbable; though the wet might have affected the quantity of bees bred, it was not likely to put a stop to their breeding altogether, and the young bees ought at any rate to have escaped the desolating evil, if it were old age alone; yet wherever the mortality once made its appearance every bee became its victim."

Modern bee-keeping commenced with the introduction of the frame hive in 1860, and the first few seasons were wet and cold. We find the bee-keepers of that period relating their experiences in the columns of periodicals, and using the language of the modern bee-keeper who describes his losses from Isle of Wight disease. The most noticeable feature seems to have been crawling bees, but the bees also dwindled or were found dead in a heap, on the floor-board.

There were serious losses during a run of wet years that terminated in 1883, and during the abnormal bee-seasons that have been experienced in the present century similar troubles have afflicted the bee-keeper. The bee-keepers of the Isle of Wight were the first to succeed in calling attention to the deadly nature of the malady, and have therefore been credited with having originated it.

According to systematic meteorological observations we get long irregular spells in which wet years predominate, alternating with similar spells in which dry years predominate. Bee-keeping is boomed in the dry years, and troubles other than foul brood are kept in the background during the wet spell. The Isle of Wight disease has always been with us and, favored by wet weather, has from time to time swept across the country. Unfortunately modern methods of bee-keeping materially assisted the present epidemic.

Under the old system, islands of healthy bees were left by the disease which passed around them. In 1911, healthy apiaries still existed on the Isle of Wight. Such apiaries quickly restock a district in favorable seasons, but under the modern system, bees are imported into a dwindling apiary, and the disease is kept going until the apiaries which escape the first wave of contagion are also involved.

Microscopic examination of a crawling bee shows that the cells lining the stomach are being destroyed by a parasite. These parasites, which are in the cells, are believed to be the young stages of *Nosema apis*, a protozoon first described by Zander in 1907. The protozoa bear the same relationship to animal life that the bacteria bear to vegetable life. Unfortunately the life history of nosema cannot be studied apart from the living bee, but it is thought that these young forms, after changing into spores, escape into the bowel and are voided during cleansing flights. Bees so infected must be a potent source of infection in wet seasons when much of the water used in the hives is obtained from paths and foliage in or near the apiary. Fresh apiaries become involved through the straying of bees and swarms.

There is good evidence that affected bees sometimes do good work in a favorable season, but the stock is liable to die suddenly after being packed down for the winter. In other cases they come through winter and then dwindle badly in the spring. A heavy loss of bees is the only symptom.

Nosema disease has been called malignant dysentery, but there is no evidence on this side that dysentery is an invariable accompaniment of the trouble. That the unhealthy condition of the bee is conducive to dysentery I feel well assured. My own personal experience is that dysentery is associated with the presence of yeasts which I have always found in large numbers in dysenteric matter.

From all countries where bee-keeping is practiced we get accounts of troubles which are suspiciously like nosema disease, and I think there is great danger of this malady being spread through its real nature not being understood. Wholesale losses of colonies are attributed to the bees being old, and never to the bees being sick.

Spring dwindling is sharply marked off from paralysis, although it cannot matter much whether the bee is unable to fly away from the hive or unable to fly back to it. Losses are attributed to the use of poisonous sprays on fruit trees, and although arsenic is bad for bees, I cannot forget that before the days of fruit spraying, poisonous nectar or frozen pollen was postulated to account for "poisoned" bees. The possibility that losses were due to the malignancy of a neighbor has not been overlooked.

As to plants, a list that included all those which have been suspected at one time or another of poisoning bees, would include most plants that yield nectar. The fact that a large number of colonies are attacked at about the same time seems to be the foundation for these statements.

A feature which was supposed to distinguish the Isle of Wight disease from all other diseases was the rapidity with which it spread through an apiary or a district. The true explanation of this seems to be that the early cases attracted no attention. These, however, caused a general infection, and with the advent of conditions unfavorable to the bee, the disease rapidly manifested itself in the affected colonies. The destruction of the first colony that shows signs of paralysis is also of little use, as the ground is soiled, and some of the sick bees have probably been attracted to other hives.

Little is to be gained by the haphazard use of drugs. We know practically nothing of their action on the bee, and the impossibility of administering them in definite quantities renders the bee an unsatisfactory patient. Reported cures must be received with caution, as enquiry may show that the colonies to which the testimonial relates died out after it was given. The only satisfactory procedure appears to be the clearing out of the apiary, and the restocking it with healthy bees after disinfecting hives and appliances. If the apiary can be started on a fresh site so much the better. If this is not possible, the site should be kept clear of bees as long as possible, and might be dug over with advantage. Then if your neighbor does not insist on keeping up a dwindling apiary, success as a bee-keeper may again be possible.

Some of the early cases of Isle of Wight disease were diagnosed as paralysis or maikrankheit. Paralysis is said to be a disease of warm climates, but its ravages in Florida and California may have some relationship to rainy seasons and swampy ground. It is hoped that observations may be made from this standpoint. If this disease is specifically distinct from the Isle of Wight disease, some definite means of distinguishing the one from the other is badly wanted.

Albury, Herts, England.

[Is it not probable that the different names, May disease, mal-de-maggio, maikrankheit, paralysis, vertigo, and the so-called constipation, are different names for the same malady, in perhaps more or less virulent stages?

L'Apicoltore, of Milan, a few years ago, gave out reports concerning this disease, showing it to be very destructive in the province of Ancona. Hamet, in his Cours D'Apiculture, reported the same disease, under the name of vertigo, as very damaging in northern France, between 1850 and 1865. In both cases, some kinds of blossoms were blamed for the trouble. But the apparition of the same disease both in Florida and California, where the floras are entirely different, and its existence in our northern States, occasionally in spring, would indicate that we must seek the original spread of the trouble more in peculiar atmospheric conditions than in the nature of the blossoms which furnish the stores.

Bevan, himself, whom our correspondent quotes, mentions the name of "vertigo" to describe a trouble much resembling the Isle of Wight disease: "This disorder is said to occur more between the end of May and the end of June, and to be marked by a loss of power in the hind quarters, by a dizzy manner of flying, and by irregular motions, such as starting, falling down, etc."

The fact that *Nosema apis* has been fed to colonies, in some cases, without producing the disease indicates that conditions must be favorable to its spread before the disease becomes dangerous.—Editor.]

Use of the Bee-Escape for Extracting Honey

Read at the Illinois State Meeting

BY L. C. DADANT.

To the enthusiastic bee-keeper, work about the apiary has its fascinations as well as its drawbacks. In my judgment the most fascinating is putting on supers when the flow is on, and when the bees are fairly rolling in the honey. The most disheartening is feeding in June, when all colonies are on the point of starvation, and seem likely to starve for the rest of the summer. But the hardest and most trying work is taking off honey by brushing bees after the crop is over and every bee is intent on doing all the mischief it can.

Through the columns of the bee journals, and at various convention meetings, noted and practical bee-keepers have made the assertion that they would rather take off honey by brushing than by using bee-escapes. I believe the conditions under which these men work must differ markedly from the conditions with us. Very probably they take off their honey at a time when there is still a light flow, and it may be that their super combs are well sealed throughout. Then the bees are more easily removed or smoked down than when there are empty, or partly empty, combs in the supers. Even with combs well sealed there is bound to be trouble.

When bees are crowded for room they nearly always build bur or brace combs and fill them with honey. Taking out the frames from every super to brush the bees, or even taking the supers apart is bound to tear up some comb, make the honey run, daub up some bees, and very quickly start robbing. No sooner is robbing started

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than some of the quietest colonies will become veritable demons, and the pleasure of taking off honey will become the most strenuous job one can undertake.

Taking off honey when there is still a substantial flow is relatively pleasant work, as there are few cross bees and little robbing going on. But in a honey dearth, when one has to brush and brush, when a hive has to be kept open for fifteen, twenty, or even thirty minutes at a time, that is when one really earns the honey he is getting. To my mind the bee-escape is one of the most useful of modern bee-implements. With an apiary of 30 to 100 hives, yielding from one to five tons of honey, we feel that we can make more rapid headway, save time, trouble, loss and temper by using the bee-escape throughout.

There is little doubt that more honey is taken from the hives today without the use of bee-escapes than with them. Probably the most serious objection offered to them by the practical apiarist is that they are not handy for use in out-apiaries. The fact that they have to be put on the hives the day before extracting necessitates an extra trip. When the apiary is at a great distance this is certainly objectionable. Many extensive bee-keepers, however, are now using automobiles or motor cycles, and with the help of these machines the time lost in going back and forth is reduced to a minimum, and can easily be made up in the time saved by using the escapes.

In putting on escapes we usually begin about 2 or 3 o'clock in the afternoon, depending upon just how warm the weather is. Should the weather be exceedingly hot, and the hives exposed to the sun, there is danger of the surplus combs melting down and being destroyed. One must remember, of course, that as soon as the escape-board is put on, the circulation in the upper part of the hive practically ceases. As soon as the bees in the upper story find themselves shut off from the entrance they seek a place of exit.

By next morning they are down in the brood chamber, and the supers are free of bees and ready to be taken off. We have found that on cool nights bees go down better than on warm nights, as they seek the cluster for warmth. However, if it is very cool, and the temperature hovers around the freezing point, the bees will not go down very well, and very often a small bunch will cluster in the upper super for warmth.

That the supers should be bee-tight is a very important item. Just as soon as the escape-board is in place, and the bees start down, the supers are left practically without any defense, and the robbers are not slow to discover this and make merry with the stores they find so easily.

The time it requires to put on escapes is from one to two minutes per hive, depending upon how tight the super sticks to the hive, and just how good a joint the super makes with the escape. With us there is an over-abundance of propolis, and the lower edge of the super is well gummed. If the weather is warm the propolis mashes out of the way, but if the weather is cool it sometimes forms lumps and holds the super up from the board high enough to allow a bee to pass under.

Before we used the bee-escapes in our apiaries we were always sure to have several bad cases of robbing at extracting time. Since we have adopted their use it is a very uncommon thing to have a single colony in danger at any time, and the honey-house is not so heavily besieged by robbers. Nearly every bee-keeper realizes what a bad case of robbing means, and dozens of anti-robbing devices have been invented with more or less success. The best safeguard is to nip it in the bud and prevent any bee from securing stolen sweets.

When the escape is put under several supers in one tier, the bees are a little slower to vacate them than when put under but one super. Very often, however, we have put them under four and five supers (shallow supers), and have had the bees go down in 12 to 18 hours. Usually the bee-escapes are put on all of the hives at one time, and the single supers removed first, leaving the higher tiers for the last, so as to give ample time for the bees to descend. Occasionally a colony refuses to leave the supers; several things may be responsible for this. Brood in the supers is certain to keep the bees above, as they always protect their brood and keep it warm. The presence of a queen in the super will always prevent their descending. A hole in the bee-escape board, allowing the bees to pass back and forth, destroys the value of the escape. This objection may seem unnecessary, but it is not uncommon for the escape-board to either have a small knot hole or a crack caused by the shrinkage of the wood. A particle of comb, a dead bee, a cobweb, or a straw in the escape spring renders the escape ineffective.

Another objection to the escapes raised by many bee-keepers is that in cold weather the honey becomes stiff as soon as the bees have left the supers, making extracting a much harder job. To my notion, handling heavy honey is preferable to brushing bees that are numb and fly just far enough to light and crawl over the bee-keeper.

These drawbacks are usually very easily overcome. When queen-excluders are used there is never any fear with either the queen or brood above. With a little care the escape-board can be made bee-tight, and the springs kept free of obstructions.

When the escape is used there is no need of handling the frames in the apiary, as this is all done in the honey-house. When the escapes are first put on, the lower super is pried loose, and if there is any dripping honey it drips on the escape-board and is all licked up clean by morning, or by the time the supers are ready to be taken off.

I am unable to give any information in regard to using bee-escapes for the production of comb honey, as our experience has been with extracted honey exclusively. However, it seems to me that they would be even more indispensable to the comb-honey producer than to the bee-keeper who runs for extracted honey alone.

Hamilton, Ill.

DR. MILLER'S ANSWERS

Send Questions either to the office of the American Bee Journal or direct to
DR. C. C. MILLER, MARENGO, ILL.
He does NOT answer bee-keeping questions by mail.

Feeding Bees in a Cellar

Is there any possible way of feeding bees in a cellar? I think some of my colonies are too short of stores for winter

My cellar is rather warm this year on account of a new furnace. I have a separate apartment for the bees with plenty of fresh air, but it is still too warm at this date; the temperature keeps up to 55 and 65 degrees. The bees are very quiet yet.

I thought of giving each colony syrup separately in a sort of little tray so arranged that the bees could not drown. Would the bees come to get this syrup or could it be given in some other way? How and when could it be done so that half of the bees would not rush out of the hives? My hives are put in two rows, one on top of the other and all the covers are off. STE. MARTINE.

ANSWER.—With a big lot of fresh air for the bees you will likely find that they will winter well at 55 or 60 degrees, although they will consume more stores than at a lower temperature. Still, as you say, the increasing cold will bring down the temperature. Better not let it go below 45 degrees.

If I understand correctly, your hives are raised in front by 1-inch blocks, and that makes a space of at least an inch under the bottom-bars—possibly an inch and a half. That allows you to put a shallow dish of feed under the frames, and if your colonies are reasonably strong they ought readily to come down to the feed at 55 or 60 degrees. If it is much colder than that, and the colonies are rather weak, they will not be likely to come down to the feed. Instead of the proposed wire-screen over the syrup you may do better to cover the syrup with cork-chips. You will get these from your grocer. He gets them as packing for grapes in cold weather, and generally throws them away.

If feeding below does not prove a success, you can feed above. Edwin Bevins reports excellent success with lump sugar. Wet the lumps by sprinkling water upon them, but do not make them wet enough to dissolve the sugar. Then lay the lumps directly on the top-bars over the cluster of bees.

Wintering—Space Above the Frames

Is the following plan good: I have a ⅜-inch board over the brood-frames. There is a ⅜-inch strip all around the outside of the board, and at each end a 2x7 inch opening. A piece of wool carpet is placed over the whole board. Also a center opening in the board 5 inches in diameter is closed by the carpet. This hole is made just right to set a feeder in, and can be used to give winter feed without disturbing the cluster very much. The whole top is then packed with a 6-inch chaff cushion.

I think the end openings in the board are large enough to carry off all the condensed moisture that may accumulate. Some bee-keepers advocate putting ½-inch strips over the frames, and the carpet immediately over this. Which plan do you think best? or is one as good as the other? My bees are packed in winter-cases with 6 inches of planer shavings all around the hives. I bridge over the entrance and allow a ⅜x6 inch space. What do you think of this manner of wintering? INDIANA.

ANSWER.—Your plan should work well, as also the plan you mention with the ½-inch strips. Very likely you would find no material difference in results between the two. Your plan does not give quite so free a passage for the air, but likely it gives passage enough.

A Frame-Lifter

Is there anything like a frame-lifter on the market? I was asked by an old bee-man to invent a small tool, one which a man can put into his pocket, but make it pull the frames out easily.

I made a little tool from sheet steel. It cuts the glue between the frames, and in a moment you can pull any frame with one hand and place the same frame back again. Your hand does not come anywhere near the frame or bees. The tool is 8 inches long, and weighs about 12 ounces. It grips the frame in the center, and holds it so well that one cannot pull it off with two hands. At the same time all you have to do is to put the frame back into the hive with one hand, touch a little catch with the finger, and off comes the tool.

Would a tool of this kind be worth anything to the bee-men, and do you think it would pay to have it patented? WISCONSIN.

ANSWER.—I don't think a tool of the kind is in common use in this country, although frame-tongs are common in Europe. They are, however, I think, generally for handling frames in side-opening hives. A tool that would allow one to lift out a frame with one hand would likely be valued by some. Othes would object that generally both hands are free anyhow, and that with one hand there would be more danger of killing bees, since there would be more danger of striking against the other combs or against the hive-ends. It is a little doubtful whether it would be worth while patenting such a tool, but then I don't know.

Doolittle Plan of Honey-Production

Have you ever tried the methods for honey-production, described by G. M. Doolittle, in his book "A Year's Work in the Out-Apiary?" If not why not? IOWA.

ANSWER.—I have never followed the plan fully in all its details, excellent as it is. There are good plans sometimes given that it may not be the best to follow; sometimes because although they may suit my conditions the plans I am already following may seem so good that I do not think I would gain enough to make a change. Yet I suppose I have suffered more from being too changeable than from being too conservative.

Ill-Natured Bees—Saving the Scrapings of Comb Honey

1. It is said that people are better natured after having eaten, and if this is so, is it not possible that the same might apply to a colony of bees. It often happens that a colony which stores a large surplus has a disagreeable disposition. Is it not possible that this is due, at least partly, to the fact that such a colony tries to get along on as little food as possible, and so we have some colonies which store a large surplus, and are ill-natured colonies.

2. I once melted up some scrapings which I got from some sections and other sources to get purer propolis, as I thought, since I supposed all but the foul matter, such as wood, would melt; but to my astonishment only about one-half changed to a liquid, and the rest, which I suppose was the propolis, changed to a black mass.

When I strained it I found that about one-half of it was bright yellow beeswax. Would it not pay for extensive producers of comb honey to heat and press their scrapings when preparing their crop for market, and so get a large amount of wax? CALIFORNIA.

ANSWERS.—1. Your facts are all right, but you are hardly making the right use of them. It is true that bees, like folks, are good-natured when well fed. It is also true, perhaps unfortunately, that some of the best storers are ill-natured. But it hardly follows that they are in their worst temper when gathering rapidly. Indeed the opposite is true. Neither does it seem likely that the bees are such poor economists as to put themselves on short rations when all their strength is required to store the flood of sweets that is offered.

2. Yes, you are right. No doubt many a pound of wax is thus wasted that might be saved.

What is the Value of a Swarm?

Will you answer the question contained in the last line of Edward F. Bigelow's article, on page 339 of the American Bee Journal; that is, such a swarm as he described or any other in September. I take it that to get the true value of such a swarm they would have to be hived in an empty hive the same as a June swarm. To help them would be adding artificially. An answer might be of benefit to beginners and slow witted people like myself. BADGER.

ANSWER.—A slight change in the form of the question referred to will make it read:

"If a swarm in July
Is not worth a fly,
Can anybody remember
What they are worth in September?"

Professor Bigelow, of course, refers to the old rhyme:

"A swarm in May is worth a load of hay;
A swarm in June is worth a silver spoon;
A swarm in July is not worth a fly."

That jingle must have been made for some locality with which I have no acquaintance. Taking it, however, at its face value, if it teaches anything it teaches that the worth of a swarm as the season advances is a constantly diminishing quantity. In July it gets down to the zero point, after that it becomes a negative quantity, by September becoming a good deal less than nothing. And that might be literally true at the time the doggerel was composed, when all that was done with a swarm was to dump it into an empty box or skep and leave it to its own devices. For the swarm would be worthless, and the mother colony would be damaged by the exodus. It is just possible—not probable—that in the present instance there was an exception, and that the flow was so heavy and continued so late that left to themselves the swarm might have built combs and stored enough for winter. The point that you have in view, probably, is that such a late swarm would be of no value, only as value would be given to it by what the beekeeper should do for it; and in a general way you are right. Yet if it should be furnished with combs and stores, so as to winter over, the value of the colony in the following spring might be greatly beyond the value of the combs and stores furnished. Yet, again, it might be more profitable still to return a September swarm to the parent colony.

White Pine or Cypress?

Which do you consider the best and most lasting hive material, white pine or cypress? IOWA.

ANSWER.—My guess would be that pine should have the preference, but I have had no experience with cypress.

Cement for Honey Jars

Kindly inform me how the cement is made which is used for sealing honey jars. PENNSYLVANIA.

ANSWER.—Generally, I think, no cement is used. But I have known it to be used made of rosin and beeswax, equal parts, or with a smaller proportion of wax. I suppose paraffin might also be used.

A Problem in Cellaring

Will you give me some light on how to carry bees into the cellar without the bees flying out and stinging. For years it has been a mystery to me how to carry bees in, and sometimes out, without closing the entrances. Is there a difference in bees, handling, location, or what? I am curious to know.

First, I will give location of bees, cellar, and mode of carrying them in. Then if you run out of "don't knows," you may let me have a guess on the trouble. The bees are in 8-frame and Danzenbaker hives (100 colonies) at an out-yard, located on a farm. They are in an orchard about 12 rods from the cellar. On account of mice in the cellar I am obliged to have wire, four meshes to the inch, over the entrances when in the cellar, the same being tacked on early in the fall. Then a common lath is notched out ⅜x4 inches, is center nailed over the wire, and afterward pried off in the cellar. On account of inequality of bottoms this entrance closer does not always fit tight against the wire-cloth or hive.

The bees are carried to the cellar on what you would probably call a stretcher, 2 colonies to a load. No matter how careful we were to carry them the 2 rods, the bees would be all over us, with the entrances open. Consequently the entrances have to be closed *tight, very tight* when we carry bees in. It takes about as much time to see that the hives are closed tightly as it does to carry them down cellar. Probably 25 colonies are carried near the cellar-door and set down, then those first carried are taken into the cellar (still closed), and later, after the bees have quieted down some, the entrances are opened 1 to 1½ inches. Sometimes this mode is followed.

Probably 25 to 30 colonies are carried down and piled near the door. Then the entrance closers are removed in about one-half hour or more, a wet rag is placed over each entrance, and the hives carried in. But the trouble with this plan is when the wet rag is removed, the bees pour out of the hives over me and everything else near. Many take wing and are lost. Of course, this is the worst. Sometimes by being very careful not many will leave the hives.

I have tried every way known to carry them in. I tried going slow and careful, but all to no use; they are sensitized beyond degree. If you want a start of these bees you may have all that you can carry 2 rods without bees escaping with the entrance open. As to strain of bees, these bees have been bred from queens of about all of the best queen breeders. But of late years I have followed your plan and reared queens from the best honey-gatherers in the apiary, and I am with you in that every year. My best yields are always from my home-bred hornets. One yard I winter outside, but this yard I place in the cellar, and every year it is a task I dread; it is worse each year. This season the bees were cellared Nov. 23. The distance from the cellar makes the carrying by one man of one colony too slow, as it takes nearly one day for two men. Thanks for any light you can give me. IOWA.

ANSWER.—I will tell you just as nearly as I can just how my bees were carried into the cellar this year. They were carried in Nov. 25, in the morning. The cellar had been wide open the night before. Although that does not make so much difference at carrying in as it does at carrying out, still it is better to have the cellar cool as possible, so the bees will settle down quietly when brought in. The average distance of the hives from the cellar-door was about 10½ rods. Then they were carried a rod or so farther to their place in the inner room. Two able-bodied men took about two hours to carry in the 93 colonies. One of them was experienced at the business; I think the other had never carried bees before. Each man picked up his hive, carried it in his arms into the cellar, and set it in its place. You may judge of the quietness of the bees when I tell you that no sort of protection was used in the way of veils, gloves, or smoke, and the entrances were left wide open. There was one exception: I had failed to staple on the bottom-board of one hive, and when the bottom dropped off I had to use smoke to fasten it on. But I must hasten to add that this year was exceptional. I think they were never carried before without veil or gloves, for at least a few colonies would prove troublesome. I don't know what made the difference. Perhaps this year the bees were in an unusually dormant condition.

Now I am not able to say just why our bees should act so differently. Some bees are more irritable than others; but I doubt if your bees are worse than mine in that respect. Perhaps one secret is in having the bees undisturbed for a long time before they are carried, and then being set down so quickly that they do not have time to get fully waked up. When they are in the most quiet condition it takes two or three minutes to get them thoroughly aroused, and in that time they are in place in the cellar. If they are stirred up ever so little, they are easily stirred up a few minutes later, perhaps hours later. You say you tack a lath with a ⅜x4 opening at the entrance, prying it off in the cellar. Closing up so warm is hardly a good thing, but the important part is when you tack it on. I should think it ought to be at least 24 hours before carrying.

But I'd rather not close the entrance that way at all.

I have carried bees on a stretcher, as you do, and sometimes it works well; but if the bees are easily stirred up the extra jarring they get when set on the stretcher, even if the stretcher be cushioned, and the longer time it takes, makes trouble. That setting down for a time near cellar-door will not do unless bees are shut in securely.

You have tried wet rags after the bees are riled. Try it before. Have the cloths dripping wet, close the entrance before the hive is touched, and take it away when the bees have had time to quiet a little in the cellar. That, of course, means you must have two or more such cloths. It is possible that my larger entrances make a difference. With your ⅜x4 inch opening very few bees will be affected by the water; with my 2x12 inch opening 16 times as many will meet the chilly cloth to be repulsed by it.

I don't know for sure about it, but I've a sneaking notion that if I should accept your challenge to take all I could "carry 2 rods without bees escaping with the entrance open," you would have to buy bees to make a fresh start. And I don't know why you can't do as well as I can.

Is there Sale for Propolis?

Is there any sale for propolis, and, if so, tell me where I can sell it? I have heard it is worth quite a bit, but never could find out where to sell it, or how much it is worth.
KANSAS.

ANSWER.—I very much doubt if there is any market for propolis, but if any one knows of such a market let him say so. If you have propolis that has been saved from scraping frames, sections, etc., you may find it a paying job to melt the beeswax out of it.

Feeding in a Cellar—Drone-Laying Queen

1. I have one colony I transferred in August after they had thrown off their second swarm. It was late in September before I saw any evidence of a queen. About this time I saw the queen, seemingly a very large black one.

Shortly after this drones began to hatch out in large numbers, and there are a great many in the hive now, though the last day or two many were killed off. Saturday, the 14th, I found a queen in front of the entrance dead.

Can you tell me what your long experience would lead you to think was the cause for these things? I fed this colony quite freely in September and October.

2. I have two light colonies that need feeding. Can I put them in a cellar and place feed in a feeder, the feeder being in a screen wire box one foot square, and fastened over the entrance in such a manner that the bees cannot get away from the hive? Will they feed and then return to the cluster? These colonies are no better than nuclei, but have splendid young queens, and I have no other bees to double with them, and wish very much to save them.

3. Will bees start brood in the cellar if stimulated with feed while there?
ILLINOIS.

ANSWERS.—1. It looks very much as if the queen had failed to mate and was a drone layer. Her death was no loss (assuming she was the dead queen), as a drone-laying queen is at least a little worse than no queen. The bees are now so old they are of no value, and the best thing is to brimstone them so as to stop their consuming stores.

2. The probability is that the bees will hardly reach the feed so far away, and if they should they might not get back. They may reach feed close under the bottom-bars, but are more likely to reach food placed over. Wet cube sugar, or lump sugar, but not enough to dissolve it, and lay it on the top-bars.

3. Possibly, if the feeding be continued a long time; but probably not.

Winter Feeding in Arkansas

In this climate, bees fly nearly every day in the year. However, there is nothing for them to get. Now I find that my bees are light in stores. I winter on out-door stands and I would like to feed them. Would you feed sugar or honey? I have some broken comb honey, and also some nicely sealed extracting frames with slightly bitter honey—our fall honey is all bitter—have never fed any of it. Will you kindly advise what is best in my case?
ABKANSAS.

ANSWER.—Very likely that bitter honey in sealed combs is just the thing. While the bitterness hurts it for market, I have never heard that it is bad for bees.

Feeding Liquid Feed in Winter

Is it too late to feed liquid feed in pepper-box feeders now? If so, why? ILLINOIS.

ANSWER—Yes and no. It's better to feed now than to let the bees starve; but it's not considered a fair deal to put off feeding till bees are in winter quarters It is generally difficult to get them to take the feed in winter, and the disturbance is not good for them.

Ontario County, N. Y., Meeting

The annual meeting of the Ontario Co., N. Y., Bee-Keepers' Society will be held in the Court House at Canadaigua on Jan. 7, 1913. A program is being prepared.
F. GREINER, *Sec.*

REPORTS AND EXPERIENCES

Likes the Journal

I enjoy the Bee Journal more than any other paper I take.
C. M. PAGE.
East Corinth, Vt.

Prospects Good for White Clover Next Season

We had a good season, and bees have gone into winter quarters in fine shape. Best of prospects for a good white clover crop next season.
JNO. S. COE.
Boyce, Va.

Poor Season Just Passed

We had a very poor honey season here, little surplus, and that is very dark honey-dew. Colonies are in very good condition for winter (heavy).
F. G. ASHBAUGH.
Avalon, Mo., Nov. 13.

California Report

As we have been very much favored with some very early rains, the prospects are very bright for a good honey season the coming year. The bee-keepers are preparing for the next crop, getting hives, supers and sections in readiness for the new year and its possibilities.

The demand for frames, and prices on the other bee-supplies, would warrant that the bee-men anticipate a good year, and we wish them a "corking" good one.
JOHN C. FROHLIGER.
Berkeley, Calif., Nov. 20.

Cement Nails—Wintering

On page 342 of the American Bee Journal for November, Wm. Muth-Rasmussen writes in favor of bright or uncoated nails. I must say I agree with him. In using nails from ¾ to 3 inches in length, there has not been a time when I did not prefer the bright nails, but could not get them; and then think of the cement-coated fingers, worse than propolis. Perhaps if there are more bee-keepers of the same mind, some dealer will keep the bright nails in stock.

I would like to know why the bees left in a hive from which a swarm has issued are called the parent colony. In nine weeks there would be nothing in the old hive but the daughter and grandchildren of the old queen. Where do you get the parentage?

All bee books and papers advise a temperature of 40 to 45 degrees, Fahr., for cellar wintering. My bee-cellar averages 33 degrees, Fahr., through the winter. The bees have wintered successfully in this cellar for years. I use a single-walled Langstroth hive, with plenty of ventilation top and bottom. In 1909, as an experiment, I wintered a very weak colony in this cellar. Only a quart of bees on nine frames covered by two thicknesses of burlap and no top. They came through all right.
South Bane, Vt. GEORGE E. MORRIS.

Another Bee-Song

(*To the tune of "Casey Jones."*)

At the Colorado bee-meeting of Dec. 12 and 13, 1912, a bee-song, by Eva D. Henthorne, was sung by 5-year old Mildred Rose Henthorne. It elicited much applause. We give one of the stanzas and the chorus:

William climbed up the cotton-wood trec,
He hustled up the ladder that swarm to see,
The neighbors knew by the way the smoke rolled down,
That the man in the tree-top was William Brown.
He climbed up within two feet of the place.
Forty thousand bees stared him right in the face.
The limb gave way and he said, "I have to drop,
And I'm going to hit the ground sir, with the bees on top."

CHORUS—

William Brown, going to hit the gronnd, sir
William Brown, with the bees on top,
William Brown, going to hit the ground, sir,
And he's going to hit the ground, sir, with the bees on top.

Bur Marigold or Spanish-needles (Bidens)

Regarding Spanish-needles, I enclose a letter from Mr. W. D. Darby, of Marionville, Mo., with whom I have been corresponding regarding this plant. He sent me seed of the tall variety, or Spanish-needle proper. I raised about two dozen very fine stalks 4 feet tail. Many of the branches and each stalk carried over 100 buds, which, by the way, do not open out. Mr. Darby says they are rich in nectar in his section, but I could not find a trace of nectar in those I raised. The plant I wanted is what he calls Spanish aster, and I hope to get seed of this variety from Mr. Darby in the spring, enough for a start.

There are thousands of acres in and around Chicago, swampy, and apparently suitable for this plant, and it was my ambition to give it a start, and replace this wild, swamp grass with the finest honey-plant the world has ever known.

The honey is of the "color of gold," has a wonderful "honey taste," and the more you eat the more you want to eat, as it lacks that "cloying taste" mentioned by our corn-syrup friend, Marion Harland. It is very thick, too thick to run, does not candy as early as white clover, and weighs about 13 to 13¼ pounds to the gallon; 5 gallon cans run close to 65 pounds. I understand the honey is in much demand commercially for its highly saccharine contents.

It blooms in Missouri about Aug. 15 to 25, and lasts until killing frost, which is about Sept. 20 to 28, making the flow from three to four weeks in duration. When at its best it yields a *flood* of nectar. I have had colonies store as much as three gallons in seven days.

Another feature of value is that it gives honey after the season has closed with alfalfa, white clover etc., and does not interfere with the regular season of other plants. Exceedingly dry weather cuts down the surplus yield, but it never fails to produce an abundance for winter stores.
Chicago, Ill., Dec. 5. W. O. H. CULLEY.

Following is the letter from Mr. W. D. Darby, of Marionville, Mo.:

Dear Sir:—As to the Spanish-needle, you sent a tip-top sample, for the blossoms of this variety never open out, but are rich in nectar, and the bees work on them in that bud form. The other is a species of the above, but of the aster type, and it is a nectar-bearing plant, also. I enclose two buds of the Spanish-needle, as I have them by the acre here, and one of the aster; here known as Spanish aster. It is fine for nectar. We have three varieties, but the above is the best; the third is a smaller aster, and has a little different seed, and is not so good to produce nectar.

I had a good honey-flow this season, my home yard having produced about 1400 pounds of white clover honey and 600 pounds of Spanish-needle; also some smartweed honey, which is fine. The Spanish-needle is also fine, and as yellow as gold.

W. D. DARBY.

[The above letters refer to some varieties of *bidens* under the name of *asters*. We must not confound the names by using popular misnomers. Both asters and bidens belong to the Composite family. Both yield honey. The flowering yellow bidens may be called aster, because its rays radiate as do those of the aster, the latter name being derived from the Greek word, which means "a star." But asters have white, purple or blue rays, while the bidens' blossom either has yellow rays or is devoid of rays. There are dozens of varieties of asters, in almost all kinds of soils, from the richest to the poorest.]

Do Bees Fly in a Straight Line?

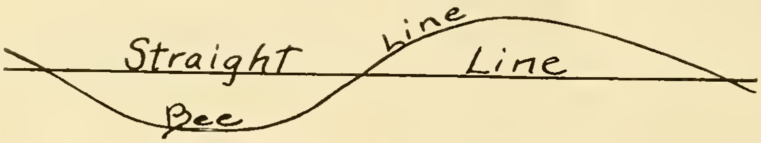
In answer to Dr. Miller's question, "Do bees fly in a bee line?" I am quite sure my bees do not find their way home as Dr. Miller suggests by memory of some route they have traveled before. I have found, by close observation, that my bees come pretty near flying, as the old saying is, "Straight as a bee line." I mean by that, that their general course is straight. This part of Montana is hemmed in by great mountain ranges on all sides, and this gives me a peculiar location in regard to atmospheric conditions, and also an ideal chance to study this phase of the bees

There are days here, in the height of the honey-flow, when it is perfectly still, not a breath of air stirring, and being at an altitude of 3500 feet, the air is quite rare, and one can see at a great distance very easily.

The past season my bees were working very busily on a field of mustard half a mile north of the apiary. It was a solid mass of yellow blossoms when there was scarcely anything else in bloom. I started from my yard afoot toward this field, and I could hear a steady roar of bees all the way, and could see great numbers of them in the air. When I got there they were on the blossoms by the thousands. This flow kept up for ten days or two weeks. Just as it went out of bloom a good-sized field of alsike clover came into bloom about a mile west of the apiary.

Now, did they go and come by the way of this mustard field in their flights to the clover? Not a bit of it. I could follow them by sight and sound straight to the clover. I was across the mustard field four or five times during this flow, and there was not a bee to be seen or heard on the way there or at the field.

Some time after this quite a quantity of sweet clover came into bloom about 1½ miles east of the apiary, and the same thing was repeated. A bee-line is not a straight line, but the course is straight. My bees go and come to the fields in a line like this.



They would cross a straight line about every three or four rods. The farthest point in the bee line to the straight line would be eight or ten feet.

FRANK MORGAN.

Corvallis, Oreg., Nov. 18.

Wants, Exchanegs, Etc.

[Advertisements in this department will be inserted at 15 cents per line, with no discounts of any kind. Notices here cannot be less than two lines. If wanted in this department, you must say so when ordering.

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GOLDEN QUEENS that produce 5 and 6 band bees. Untested, $1.00; Tested, $3.00.
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QUEENS—Improved red-clover Italians, bred for business; June 1 to Nov. 15. Untested queens, 75c; select, $1.00; tested, $1.25 each. Safe arrival and satisfaction guaranteed. 1A1y H. C. Clemons, Boyd, Ky.

GOLDEN and 3-band Italians, also gray Carniolan queens. Tested, $1 00 each; 3 or more 90c each. Untested, 75c each; 3 to 6, 70c each; 6 or more, 65c each. Bees per lb., $1.25; nuclei per frame, $1.50. A discount on orders booked 30 days before shipment. 1Atf
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X03 American Bee Journal, Hamilton, Ill.

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Apiarists, Rt. 3, Box 9 B, Oroville, Calif.

SITUATION WANTED—By a young man who has successfully passed his examinations after taking a course of lectures and demonstrations in Apiculture at the Ontario Agricultural College. Any one desiring help of this kind for the season of 1913, kindly correspond with Morley Pettit, Provincial Apiarist, Ontario Agricultural College, Guelph, Canada. 1A2t

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FOR SALE—White-egg strain Indian Runner Ducks, White Orpingtons, White Wyandottes, Houdans, Bronze Turkeys. Ducks, $1.25 each. A. F. Firestone, Broadwell, Ohio.

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How to Keep Bees, by Anna B. Comstock —This is a practical work on bees, written with the special intent of instructing amateurs in bee-keeping. The authoress is well versed in her subject, and has written a book which is very good for the amateur or suburbanite who wishes to keep bees in a small way. The book contains 228 pages. Cloth bound, postpaid, $1.00; or with the American Bee Journal one year. $1.75.

Quinby's New Bee-Keeping, bv L. C. Root. —This is a modern edition of "Quinby's Mysteries." Mr. Quinby is well known to all bee-keepers. He, with Mr. Langstroth, was responsible for much of the early growth in bee-keeping in America. Cloth bound, 220 pages. Price, postpaid, $1.00; or with the American Bee Journal for one year, $1.75.

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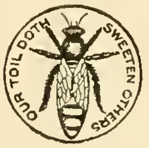
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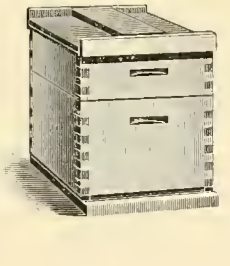

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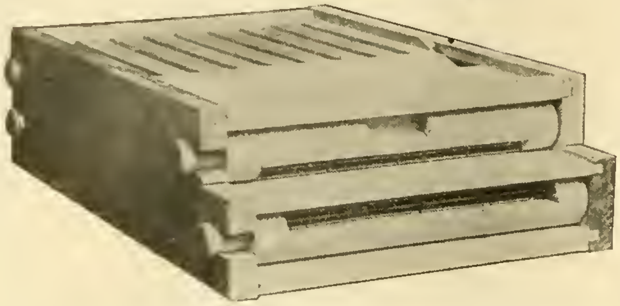

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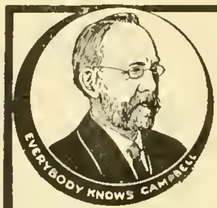

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These are just three of the articles that will appear soon in the Bee-Keepers' Review There were 74 of them during 1912. We had 64 contributors. They were not articles written out for pay, either; but those sent in on the spur of the moment, when all the faculties were tingling, and that kind is always the best. Possibly their fingers were daubed with propolis when they wrote some of them. But they had an idea they wanted to give you that had helped them. It came just as they would have told you had you been where they could talk to you. And that is just the kind of contributors we will have for 1913. Their articles will ring with practibility, And the best articles often come from most unexpected places. Send in your $1.50 now, and get full membership in the National, full membership in a Branch, and the Review each month for a year. Write

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(A Beginners' Department to start in the January Number)

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He said you can attain to royalty by loving sweets.

"He who knows what SWEETS .... are in the ground, the waters, the plants, the heavens, and how to come at these enchantments, is the rich and royal man."

"HOW to come at these?" Aye, there's the rub.

How many people miss them! and perhaps some of these many, strange to say, *keep bees*. Want to know how? Send $1.00 for a year's subscription to

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It is edited by Edward F. Bigelow, a sweets extractor—in other words, "a bee-man" and a naturalist.

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HONEY AND BEESWAX

SAN FRANCISCO, Dec. 20.—The demand for comb honey has not been so marked, although plenty has been offered, and the prices are as follows: Fancy No. 1, 15@16c; No. 2, 13½@14½c; dark comb, 11@12c; water-white extracted, 8@8½c; light amber, 7½@8c per lb; amber, 6@7½c; lower grades, 5@6c Beeswax, 27@30c for nice yellow wax, and 23@26c for dark. JOHN C. FROHLIGER.

LOS ANGELES. Dec. 18.—There is only a small quantity of honey on the Coast unsold, but it should move out rapidly, as it can be bought at very reasonable prices, considering that the market is bare of white and water-white sage honey. We quote: Light amber sage, 6¼c per lb.: light amber alfalfa, 6c per lb.; white to water-white alfalfa, 7@-7¼c per lb, All f. o b. Coast, dollar freight rate by rail.

Light amber sage, 6½@6¾c per lb.; f. o. b. Steamer San Diego, with 60c freight rate to New York. Honey has been moving forward steadily, and the indications are that stocks will be practically exhausted long before any new honey is available.

HAMILTON & MENDERSON.

CINCINNATI, Dec. 17.—There is a big supply of both comb and extracted honey, and the sales are slower than they have been for some time back. This is quite natural, for Christmas candies and nuts have the attention of the buying public at this time of the year. We are selling fancy comb honey at $3.75 to $4.00 a case; and our best grades of extracted honey in 60-pounds cans at from 8½@10c a lb., according to the quantity and quality purchased. For choice bright yellow beeswax we are paying 28c a pound delivered here.

THE FRED W. MUTH CO.

KANSAS CITY, MO, Dec. 18.—The supply of honey is equal to the demand. The demand is fair for both extracted and comb. We quote as follows: No. 1 white comb, 24 section cases, $3.15 to $3.25; No. 2, $3.00; No. 1 amber, $3.00; No. 2, $2 50 to $2.75. Extracted, white, per pound, 8@8½c; amber, 7@8c. Beeswax, 25@28c.

C. C. CLEMONS PRODUCE CO.

INDIANAPOLIS, Dec. 17.—White comb sells at 18c in 10-case lots; No. 1 white, one cent less. Amber comb in slow demand, and at lower figures. Best extracted sells at 11@12c in 5-gallon cans. Comb honey seems to be in excessive demand, and very little is now being offered by producers. Beeswax is in good demand, and producers are being paid 30c per pound. WALTER S. POUDER.

CHICAGO, Dec. 18.—Honey has sold well during the first half of December, but stocks are still heavy, and prices being made at less than quotations herein given by people who do not make a specialty of honey. Hence, it is difficult to give exact figures. No. 1 white comb honey ranges from 15@16c per pound, with the fancy bringing 17c per lb. No. 2 white from 10@14c per lb. No. 1 to fancy amber, 13@15c per lb. Dark grades of comb and lots out of condition sell at from 8@10c per lb. Extracted honey in new cans and cases, white clover and linden brings 9@10c per lb. Other grades of white honey about 8c per lb., with amber grades ranging from 7@8c per lb. Beeswax steady at from 30@32c per lb., according to color and cleanliness. R. A. BURNETT & CO.

NEW YORK, Dec. 18.—Comb honey is getting well cleaned up, and prices are very firm on all grades. While some small shipments are coming in, the bulk of the crop has been marketed, and from now on receipts will be next to nothing. We quote fancy white at 18c, No. 1 white at 15c, No. 2 white at 13@14c, dark and mixed at 12c per pound.

The market is easy on extracted honey, and prices are gradulally declining, especially so on Porto Rican and other West India honey. Receipts of a new crop have been quite large recently, and will probably continue so for several months to come. The demand is very light, hence the decline in prices. We quote West India honey at 75c per gallon, white clover at 8½@9c per pound, California light amber sage at 9@9½c, buckwheat at 8c per pound.

HILDRETH & SEGELKEN.

DENVER, Dec. 19.—We quote comb honey in a jobbing way at the following figures: Strictly fancy white, $3.15; No, 1, $3.05; choice, $2.85; No. 2, $2.70. Extracted honey, white, 9c; light amber, 8c; strained, 6¾@7c. We pay 26c in cash, and 28c in trade for clean yellow beeswax delivered here.

THE COLO. HONEY-PRODUCERS ASS'N.
F, Rauchfuss, *Mgr.*

CINCINNATI, Dec. 20.—The demand for comb and extracted honey is light with a good supply. No. 1 white comb honey sells in large lots at $3.60 per case of 24 sections; there is no demand for off grades. White extracted honey in 60-pound cans is selling from 9½@10c; light amber in barrels, 7@7½c; in 60-pound cans, 8@8½c. Beeswax in fair demand, sells at $33 per hundred.

The above are our selling prices, not what we are paying. C. H. W. WEBER & CO.

BOSTON, Dec. 18.—Fancy white comb honey, 16@17 per lb.; No. 1, 15@16c. Fancy white extracted, 10@11c; light amber, 9@10c; amber, 8@9c. Beeswax, 30c. BLAKE,-LEE CO.

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The well known quality of Root's goods hardly needs mention here. We are not content with making supplies "good enough." They must be just right and a little better than necessary to answer the requirements of our standard. Hives, frames, and sections are uniformly acurately cut and finely finished. From the machine shop to the packing and shipping room every detail is carefully cared for to ensure the entire satisfaction of every customer. Extractors, smokers, honey-knives, veils, gloves, honey-tanks, every thing used in the smallest yard or the largest apiary is here ready for your use. Honey labels, letter heads cards, etc., used by bee keepers made to your order promptly. Special catalog for these on request.

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The Best Time

To Buy Supplies

THE season just past has demonstrated more clearly than ever the necessity for being prepared for a honey-flow BEFORE it comes. If you wait until the season is upon you, the chances are that the greater part of the crop will be lost while you are impatiently waiting for supplies to arrive. It may seem a little early now to think of next season's honey harvest; but the fact of the matter is, this is just the time to order goods for next season.

We are beginning now to replenish our stocks. We shall have carload orders coming from the factory very often for the next few weeks. Special orders placed now can have just the attention they need, both here and at the factory, and you may have your goods sent in one of our cars, thereby saving on transportation charges. Regular stock will come straight to you from our warehouse in unbroken packages, and you can put the goods together in your odd minutes, thereby saving the expense of extra help in the spring.

Our usual discounts for early orders apply again this season—six percent for cash orders sent in October, the discount diminishing one per cent per month as the season advances. These discounts mean a considerable saving, and you might as well take advantage of the highest by ordering now. No change of prices as yet has been announced, and you may, therefore order from your present catalog. If your catalog has been mislaid, write us at once and we will send another.

If your season's crop of honey is not yet disposed of, we can give you a good price and handle it promptly. Send samples of extracted and full information as to containers, flavor, quantity, price, etc. We also handle comb honey.

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AMERICAN BEE JOURNAL

FEBRUARY 1913

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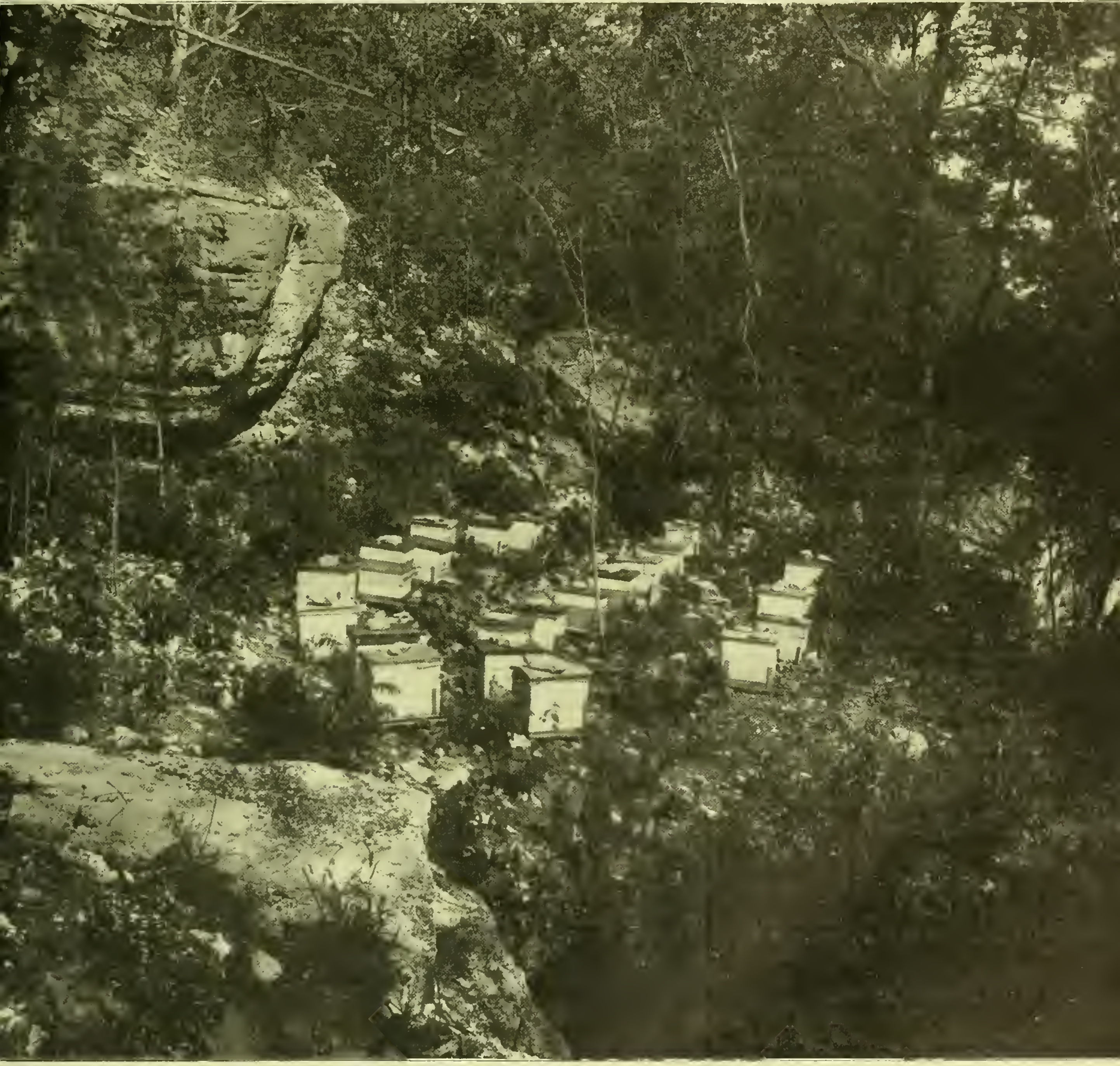

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The scene above represents one of the out-apiaries of Mr. J. F. Diemer, of Liberty, Mo. Mr. Diemer states that this is as good a honey location as it is picturesque.

AMERICAN
ESTABLISHED IN 1861
OLDEST BEE PAPER IN AMERICA
BEE JOURNAL

PUBLISHED MONTHLY BY
American Bee Journal
1st Nat'l Bank Bldg. Hamilton, Illinois

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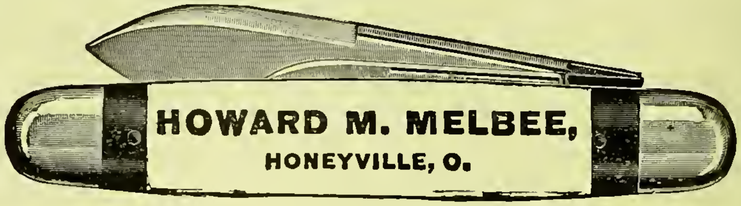

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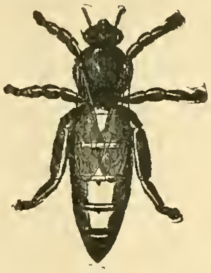

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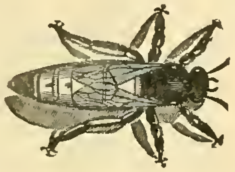
Darlington, Wis., July 31, 1912. C. R. BRIDGMAN.



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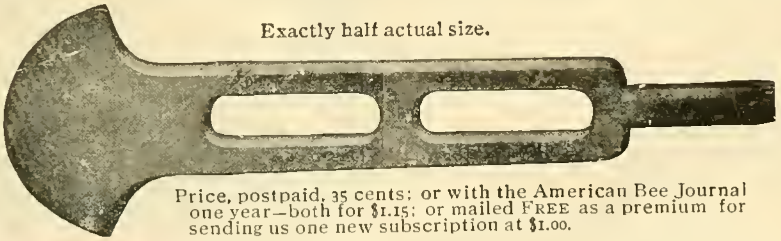

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We can also furnish the yellow biennial seed. This variety blooms about two weeks earlier than the white which makes it preferred by some bee-keepers. For the yellow seed add one cent per pound to the above prices on the white variety. Seed will be shipped promptly on receipt of order.

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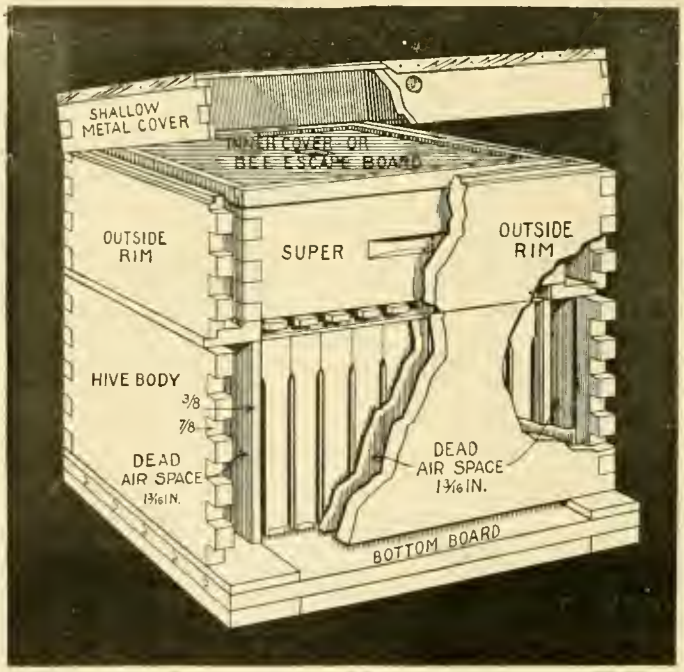
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AMERICAN BEE JOURNAL

(Entered as second-class matter at the Post-Office at Hamilton, Ill., under Act of March 3, 1879.)

Published Monthly at $1.00 a Year, by American Bee Journal, First National Bank Building

C. P. DADANT, Editor.
DR. C. C. MILLER, Associate Editor.

HAMILTON, ILL., FEBRUARY, 1913

Vol. LIII.—No. 2

EDITORIAL COMMENTS

Bees in Switzerland

In an article in this issue, Mr. Adrian Getaz shows his usual good sense of observation and deduction. Without taking sides entirely with him on this subject, we feel that we must corroborate his statements and those that he quotes of Doolittle and Benton concerning the remarkable influence of the drone upon the progeny's characteristics. Italian queens mated with common drones, under our observation, have invariably produced cross-tempered bees, while the reverse was the case in the mating of Italian drones with queens of common stock.

That the Europeans in general prefer the production of extracted honey is true. A less value is put upon the fancy comb honey than in the United States. Extracted honey is the honey for the masses, for it can be produced much more cheaply and in greater quantities, other conditions being equal. With its production, the bees are less inclined to swarm, for they may be supplied with empty combs, *ad libitum*, and the hives may be made spacious enough to accommodate the most prolific queens.

The Swiss prefer their own bees to other races. We read somewhere, not long ago, that this was due to the peculiar climate and altitude of Switzerland Moist, cool weather prevails, and the climatic conditions are very different from what they are on the south of the Alps, in what is called Italian Switzerland, where the summer climate is much more similar to that of the United States.

Dead Larvae Among Live Brood

E. D. Townsend, in the Bee-Keepers' Review, page 124 (1912), urges the breeding of a strain of bees which shall be immune to bee-diseases. As an argument in favor thereof he offers that some colonies are more prone to disease than others, and in that connection has the following which will especially arrest attention:

> "It is nothing strange to open a colony of bees in summer and find a hundred or more dead larvæ in the combs, and this neither of the two diseases known as foul brood. It will be later removed by the bees and disappear. Perhaps the next colony opened will show no signs of dead brood in their combs, and would be a more desirable colony to breed from, from a brood disease standpoint."

The first thought upon reading that paragraph, if one knew nothing about the writer, might be, "Whoever wrote that knows very little about bees, and has made a general conclusion upon very small premises," But E. D. Townsend is not that kind of a man. He is a man of long experience, whose word passes current for its face value. There is no room to question that in his experience it is a common thing to find a colony free from foul brood, and yet with 100 or more dead larvæ scattered among the living ones. Has anything of the kind been published before? If so, it has escaped our observation.

The question arises, whether the same thing has occurred to others who are less careful observers than Mr. Townsend, or whether it is something peculiar to Mr. Townsend's bees. The fact that only part of Mr. Townsend's bees are affected leaves it possible that elsewhere none are affected. In any case the matter is of so much importance that we should have as much light upon it as possible. Have others had a like experience? If so, may we know something of the cause and remedy?

Wintering on Summer Stands

Many bee-keepers are adopting the method of moving from four to six hives close together and sheltering them in a rough outer-case, filling the space with forest leaves, chaff, straw, or other material. A very cheap outer enclosure can be made of wire-netting surrounding the hives, the space filled with warm, dry material, with a broad roof of coarse lumber covering the whole. The wire-netting, such as is used for chicken fences, does not need to be more than 30 to 36 inches in height. It has the advantage of occupying but little space when piled away for summer.

Cause of Many Eggs in a Cell

An Idaho friend sends a clipping from the Gem State Rural, which contains the following inquiry:

> "Please tell me what was wrong with a swarm of bees I lost this summer. The first I noticed wrong, the queen was laying from one to as high as 100 eggs in one cell. She filled every empty cell in the hive the same way. Only a few eggs seemed to be fertile; those were drones. In about three weeks I looked into the hive only to find a handful of bees and no queen."

In reply, the Editor quotes a correspondent who "expresses the view that the queen was probably a drone-laying queen. However, he can offer no special opinion as to the matter of her laying from one to 100 eggs in a cell."

The sender desires an opinion from this quarter. If I may be allowed a guess in the matter, I should guess it was a case of laying workers, possibly preceded by a drone-laying queen. It is a common thing for laying workers to lay a plurality of eggs in a cell. Generally, however, this plurality will be found in queen-cells or drone-cells, while possibly only a single egg will be found in each worker-cell. Sometimes the first intimation of the presence of laying workers is the finding of a lot of eggs in one or more queen-cells. It is just possible that very careful counting might have reduced that "100 eggs in one cell" to a smaller number, for it is not the easiest thing to count such eggs.

As to Bee-Terms

Among editors of bee journals none is more wide-awake than Rev. J. G. Digges, editor of BeeKeepers' Gazette and Irish Bee Journal. He is not only up to date, but sometimes ahead of date. Witness the word "beekeeper" which he uses. No such word is to be found in the dictionaries; perhaps not in any dictionary. Instead of that the word "bee-keeper" will be found. But Editor Digges says it ought to be "beekeeper," and with him "beekeeper" it is. If he has no authority for the word, he has justification for it. When two nouns are used together to name a single object, it seems the right thing to join the two words by a hyphen as soon as the use becomes common, or even before it is common. Later, the hyphen drops out and the two words are written together as one. Thus a house keeper would be written "house-keeper" for a time, and then "housekeeper," as it now appears in the dictionary. By the same rule "bee-keeper" should become "beekeeper" whenever its use is common enough, and in all conscience it seems to be common enough now. Dictionaries record what is usage; as soon as others join Editor Digges in allowing bee-keepers to do without a hyphen, no doubt the word "beekeeper" will appear in the dictionary.

Knowing this up-to-date character of Editor Digges, one who opens to page 107 of the Beekeepers' Gazette, will be somewhat surprised to find "honey bee," not a single time, as if a typographical error, but a number of times. To keep company with it, "humble bee" appears on the same page. What authority has he for anything of the kind? The dictionary gives "honey-bee" and "humblebee." Think of the inconsistency of a man so far ahead of the dictionary as to write "beekeeper," and then so far behind the times as to write in two separate words what the dictionary joins with a hyphen, and then to disjoint another which does not have even a hyphen!

If that sharp-witted Irishman has any authority, any justification, any reason for his course, let him produce it. If not, a prompt apology will be expected at this office, postage prepaid.

Has Honey Advanced with Other Food Products?

The high cost of living is in the air nowadays, and it is natural that the bee-keeper should inquire whether he is getting his share of the advance. It may be of interest to see how market quotations of honey compare during a few past years, taking the same month each year, say September. New York and Chicago may be taken as representative; at least they are two of the most important markets. Taking four years, beginning with 1909, the highest quotations are as follows:

	N. Y. comb	N. Y. extracted	Chicago comb	Chicago extracted
1909......	15	8½	16	8
1910......	16	9½	17	9
1911......	16	10½	18	9
1912......	16	8½	18	10

If we lump together the four quotations of each year we get:

1909..........................	47½
1910..........................	51½
1911..........................	53½
1912..........................	52½

According to that the increase for the period from 1909 to 1912 is only 10 percent. That does not compare very well with the 25, 30, or more percent advance of most other eatables.

There may be some good reason for all this, yet it hardly looks as if the bee-keeper is getting all that should be coming to him. But just how the thing can be remedied is one of the things that "no fellow can find out."

United effort is probably the only possible and evidently distant solution of the problem.

A Venomous Error

Some errors die hard. Errors apicultural seem especially tenacious of life. One is reminded of this upon reading in a leading apicultural journal, in a scientific article, "Then the cell is sealed after the bee has deposited in it a drop of poison." Just exactly how the drop of poison is deposited in the cell is not stated, but a full statement, more or less according to popular belief, would run something like this: "The poison of the bee's sting consists of formic acid; formic acid is contained in honey; the formic acid in honey is dropped into the honey from the bee's sting just before the cell of honey is sealed." Of those three statements, the central one is true, sandwiched between two errors.

A few years ago it was shown—was it by Dr. Langer?—that the poison of the bee's sting was something other than formic acid. Even if that poison were formic acid, pure and simple, is there a particle of proof for the brazen assertion that just before a cell of honey is sealed over the bee drops into it poison from its sting? In the honey harvest thousands of cells of honey are sealed over in a day. If each cell has a sting thrust into it before the sealing it ought not to be a difficult thing to see it. But no one has ever yet claimed to have had a sight of the performance.

Lately it has been shown by Reidenbach that instead of formic acid being derived from the bee either through its sting, its blood, or in any other way, it is developed in the honey itself by exposing to the air a thin layer of honey. What more satisfactory proof could be asked?

Yet for years to come we are likely to be told: "Just before a cell of honey is sealed over a bee drops into it a ration of formic acid from its sting?"

European Foul Brood

The article on another page by L. Harris, will be read with surprise by those who are somewhat familiar with the literature of European foul brood, as it has generally appeared in this country. Yet close readers will be somewhat prepared for the surprise by having read what was said by Morley Pettit, lately quite closely in accord with the present article. It is difficult to comprehend by those who are familiar with European foul brood in the United States, how it can be possible for any one to say "the poorest quality of glue is quite fragrant in comparison with an advanced case of European foul brood......and if one gets close down to the entrance and can exercise his olfactory powers, it can be detected even if there are only a few cells diseased." The writer does not know just what Mr. Harris would call "an advanced case" of European foul brood, but is certainly quite familiar with cases having "only a few cells diseased," and would say that in such cases not only is it not possible to deect the disease by an odor at the entrance, but not even if the diseased comb be held close to the nose. Yet when two such men as Mr. Pettit and Mr. Harris make statements it will hardly do to set them aside with a wave of the hand. It is greatly to be desired that the matter should be thoroughly thrashed out by competent hands, and satisfactory explanation given for such widely divergent views.

Bee-Diseases in England

England has not, as yet, any law concerning bee-diseases. In the British Bee Journal of Nov. 28, a correspondent opposes the proposed legislation. The ability of this man can be judged by the fact that he holds that bee-keeping in fixed comb hives, or in skeps, is "the most reasonable and the most profitable form of bee-keeping." However, we must acknowledge that he strikes the right spot when he says of expert inspectors: "Unless these men have had the practical experience of managing numbers of colonies successfully, they are surely not fit to be sent out to exercise compulsory powers over those of their neighbors; but if they have had such experience, they must be worth a great deal more than they get."

This is the most important point in making and enforcing laws on any question. The man who is intrusted with the execution of the law must be a practical man with plenty of experience in the line in which he is to work, and if he is such a man, he should receive ample pay for his work.

There is no doubt that laws are needed, and that where they are properly enforced by competent men, they do a great deal of good, so it is out of the question to agree with the above named writer about the inexpediency of laws on bee-diseases, just because their enforcement may be intrusted to incompetent men. This applies as well to laws on any subject where questions of health are involved. The improper enforcing of a law does not make that law improper.

Improvement of Bees

The Editor asked Dr. Miller whether, in his opinion, we had best continue much longer the discussion of the non-improvement question, which seems to him rather a loss of time. We ask the Doctor's pardon for printing his private reply. It is short and to the point:

"Of course it won't do to overdo the non-improvement discussion, and you can choke it off at any point you like. The thing that I have felt important was for every one of the rank and file to breed from his best stock, with a lot of gain to be made by it. I do know that I made a very material gain. Within two years I have had stock from others, but nothing that would get within sight of my old hornets. If only they were not so *hornety!*"

The Parcels Post

The discussion of a question of general interest like the parcels post is hardly of the province of a bee journal. Yet it is of such vital importance to our bee-keepers that we may be forgiven for giving it additional notice. We have much to learn from our European friends on this subject, from their failures as well as from their successes.

The British Bee Journal for Dec. 12 contains a short mention of a package of honey in tin having been sent by parcels post and damaged along the way so that half of the honey was gone; very probably with great damage to the mail. The accident is ascribed to the policy of abolishing hampers and replacing them with sacks. In the number of Dec. 26, page 513, a reply is made, stating that the hampers are "coming back again."

In this country of haste and hurry, where one baggage-man does the work of three or four, and where laws had to be made punishing with heavy fines the "baggage smashers;" where a trunk, in one day's journey, gets worse worn than in a year's travel in Europe, we are accustomed to the swinging of the mail-sacks as if they were base-balls or foot-balls. It seems quite the thing for a man as practical as Doolittle to say as he did, in the November number, page 388: "Of course comb honey will never be handled by mail very much on account of the liability of breakage......" So we are *stupefied* to see the parcels post preparing to handle eggs. But, why not? And why not comb honey? Why cannot Uncle Sam do our shipping better than those Express companies which have been robbing us so many years? Why could we not get better treatment from our own men than from the management of corporations?

The new parcels post is a very "clumsy, inadequate affair." True, but it is an entering wedge. Let us use it and take patience. Sooner or later we will have a uniform rate for all things, except a few unmailable articles, and we will be able to learn all the regulations without having to read a whole book of more or less rational exceptions.

The parcels post is our creation, and we, the people, ought to be able to improve it as we go. It is true that most of us need to be more thoroughly informed of our needs and of the remedies. As once wrote Montesquieu: "In a country where the people is sovereign, the education of the least citizen is as important as that of the heir to the throne in a monarchy."

Sawdust Versus Cinders

In our correspondence this month is a letter from a bee-keeper who has tried sawdust to keep the grass down in front of his hives. It proved a failure. There is one great objection to sawdust. In very dry weather a spark from the smoker may set it afire. Cinders are surer and safer.

Marketing Honey

An excellent article on this subject, written by J. C. Frohliger, of California, was read before the Stanislaus Bee-Keepers' Association and reproduced in the California Cultivator of Dec. 12. Contributions of this kind should be more general, for they enhance the value and the demand of honey by calling attention to it. When so much money is spent upon more or less injurious products like tobacco, whiskey, and cheap candies, it ought not to be difficult to increase the sales of "the sweetest of all sweets."

Feeding Bees in Cellar

Our readers will appreciate the excellent article by Mr. Miles on the use of smoke and the feeding of bees in cellar wintering. We have never needed smoke in putting the bees in the cellar, because we have always done the work on a cold day, and have cooled the cellar beforehand, as Mr. Miles aptly suggests. But when taking them out we have often found it necessary to use smoke in exactly the way that he recommends.

At the Ohio meeting a few days ago, we heard Editor Root, of Gleanings in Bee Culture, recommend the use of snow, thrown upon the entrance, to keep the bees from trying to emerge while the hives are being carrried in, in cold weather. He explains that the snow melts away after the hives are in the cellar, and does not cause any inconvenience. However, there are many instances when snow is not to be had, in our latitude, even in cold weather. Its use would also be impossible if we remove the bottom-boards, which we consider a good practice unless, like Dr. Miller, we have a deep space between the bottom-bar of the frames and the floor of the hive. In his case, it would take too much snow to fill the depth of the entrance.

As to feeding in cellar, we can answer Mr. Miles' question on candy feeding in the affirmative. We have often used it on colonies that were short of stores, either in-doors or out-of-doors, and it works splendidly, with the advantage that it does not excite the bees. It may be laid right over the frames above the cluster, and they will come up and cover it. It will slowly disappear, fulfilling its mission The recipe is short, and may be found in the Langstroth-Dadant book, paragraph 611:

"Add water to sugar and boil slowly until the water is evaporated. Stir constantly so that it will not burn. To know when it is done, dip your finger first into cold water and then into the syrup. If what adheres is brittle to the teeth, it is boiled enough. Pour into shallow pans, a little greased, and, when cold, break into pieces of suitable size."

You may use sheets of paper instead of pans, and may divide the cakes evenly by marking them before the candy hardens. Any young lady who has made "fudge" can make good candy for bee-feed. Of course, as with everything else, it must be made right.

Mr. Miles' suggestions, however, are all practical, and no one will regret following them.

MISCELLANEOUS NEWS ITEMS

Beet Sugar Kills Bees.—That beet sugar is fatal to bees and cane sugar is not, is the conclusion of Prof. J. G. Sanders, of the Department of Entomology, University of Wisconsin, who, next semester, will have charge of a new bee-keepers' course at that institution.

Of the 40 percent of bees in the State which died last year, a large percentage were starved, he says. He believes that bees can live on cane sugar, but die at once if fed on beet sugar. The danger to bees in beet sugar, he believes, arises from some chemical constituent that makes it deleterious. He said the time is coming when an investigation will be made, and intimated he would not be surprised if beet sugar was found to be harmful to human beings.—*Exchange.*

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Eastern Illinois Meeting.—Mr. H. S. Duby wishes us to announce as part of the program of the Eastern Illinois meeting, on Feb. 4 and 5, a half-hour debate between himself and the Editor of the American Bee Journal, 15 minutes each, on "Small *vs.* Large Hives." The Editor had thought of excusing himself from attending this meeting, on account of going to so many, but this might look as if he were "scared," and it would never do. So the challenge is accepted. The two Frenchmen will fight it out.

◆

The Chicago-Northwestern Meeting.—The Chicago Northwestern Association held its 16th annual meeting at the Great Northern Hotel on Dec. 19 and 20, 1912. For the first time since its origin, the Association held its meeting without the presence of Pres. George W. York, Vice-Pres. Huffman occupying the chair.

Although there was not so large an attendance as at some of its previous meetings, it made up in enthusiasm what it lacked in numbers. The proceedings of this meeting were taken in shorthand, and will appear in the Illinois State Bee-Keepers' Association's report.

The following officers were elected for 1913: President, Jacob Huffman, Monroe, Wis.; Vice-President, C. F. Kannenberg, Oak Park, Ill.; Secretary-Treasurer, L. C. Dadant, Hamilton, Ill.

The Association voted to join both the National and the Illinois State Associations. F. B. Cavanagh was chosen regular delegate to the National convention, with John Kneser as alternate.

It was decided to hold the 1913 meeting during the Live Stock Show at Chicago.

L. C. DADANT,
Secretary-Treasurer.

◆

Death of Dr. Wm. R. Howard.—We are informed of the death, on Dec. 25, 1912, of the above-named scientist at Fort Worth, Tex. He died while on duty, in his buggy, responding to a call. He was 64 years old.

Dr. Howard acquired a name among bee-keepers by his microscopic and bacteriological studies of foul brood, described in a pamphlet of 48 pages, entitled "Foul Brood, its Natural History and Rational Treatment," published in 1894. He recommended the McEvoy treatment.

He was a member of the Texas Academy of Science and of the American Microscopical Society.

◆

Bee-Keeping in Schools.—As an illustration of what could be done by nearly every bee-keeper for the furtherance of education in bee-keeping, we refer the reader to the pictures illustrating what Mr. Coppin, of Wenona, Ill., has done. Mr. Coppin, using the colony of bees which he had previously exhibited at the Illinois State Fair, gave interesting information to the pupils of the Wenona schools. E. F. Nichols, superintendent of the schools, writes as follows:

"When the class in zoology came to the study of bees, presumably one of the most interesting and profitable subjects in the work, it was thought best to get it in as practical way as possible. The teacher who, in this particular school, happens to be the superintendent, went to the distinguished 'bee-man,' Mr. Coppin, and consulted with him as to the best methods for study. After a brief discussion, Mr. Coppin invited the teacher and class to visit him in his apiary.

"The invitation was accepted one bright morning. Mr. Coppin provided the necessary paraphernalia for the young people, in order that they might

TEACHING BEE-KEEPING.

Aaron Coppin Explaining the Intricacies of a Bee-Hive to a Group of School Children

go among the bees. He then proceeded to give them a lesson, and explained to them how the bees could be quieted, and, took up in a very systematic way the bees at home; the queen, workers, and drones; the usefulness of each was carefully explained, the comb was exposed, and showed how made and why. The journey of the bee to the flower and return created a great deal of interest. The swarming, or the separation of the colony was worked over until it was well understood. Many other things were presented to the class, and all felt repaid for their journey to the apiary."

Kansas State Meeting.—The annual meeting of the Kansas State Bee-Keepers' Association will be held in the Commercial Club rooms at Topeka Feb. 4 and 5. We earnestly hope all persons interested in bees will be present. The meeting will close with a banquet Wednesday evening.

O. A. Keene, *Sec.*

Southern California.—The bee-keepers of Southern California report a good meeting at Los Angeles on Dec. 12, 13, and 14, 1912. Mr. M. H. Mendleson, who was present, says that the time was too short for the good program they had.

Organization is the thing to promote your interests. But the organization must be well advertised in order to become universal. We will gladly give this matter a helping hand.

Typographical Errors.—"What taffy are you giving us," asked one of our subscribers concerning an extra cypher in the number of sections of honey harvested from 25 colonies, printed on the front cover of our January number. The error was corrected before the entire edition was printed. Those who received it with the error uncorrected may have a laugh at the printer, as did the readers of the society column of a daily reporting that the doctor "lanced the dancers," instead of "danced the lancers."

Our European subscribers might well accuse us of "American exaggeration." We plead unintentional guilt—"23,000 sections" should read "2,300."

New Jersey Report. — The Annual meeting of the New Jersey branch of the National Bee-Keepers' Association was held Dec. 20, 1912, at New Brunswick in the Entomological Building of the New Jersey Agricultural Experiment Station.

This was the liveliest meeting for a long time. The weather was fine, and there was a large attendance from all parts of the State. Several interesting papers were read, which brought forward some new ideas, and caused useful discussion.

Dr. E. F. Phillips was present and gave a very instructive talk with lantern views, upon treatment of foul brood. The views showed an operator treating a colony, from the first arrangement of the old hive, the new hive, a super cover as a runway, and with smoker and record book until the work was completed and everything cleared away. A live demonstration could have been but little more satisfactory.

Dr. Headlee, the new head of the Agricultural Station, also addressed the meeting along the line of pollination by the bees, and forcasted an increased demand for bees for this purpose.

Mr. C. H. Root, of Red Bank, was elected President. Mr. E. G. Carr, the present very efficient Secretary, was reelected. Mr. Carr was also chosen to represent the bee-keepers at the State Board of Agriculture meeting in Trenton Feb. 8, 9. 10, 11, 1913. Mr. Harold Hornor, of Philadelphia, Pa., was elected delegate to the National Bee-Keepers' meeting at Cincinnati. The membership has about doubled since the summer meeting in July.

◆

Profits and Losses.—A carefully made yearly account of profits and losses in the business of bee-keeping is someing which we rarely get. Either there is no such account kept or the careful man who keeps it does not care to give it to the public. A great deal more satisfaction would be secured out of the business side of apiculture if each of us would keep a strict account of all incomes and expenditures.

Year	No. cols. Spring count	No. cols. Fall count	No. sec. comb produced	No. lbs. extracted produced	No. lbs. wax produced	Total sales	Total exp. labor sup. rent. etc.	Cap inv. bees sup. appli Jan. 1	Percet return capital
1902......		9							
1903......	8	17	466			58.25	35.60	32.00	71
1904......	14	24	493			61.62	61.50	77.35	00
1905......	12	15	24			4.60	24.80	173.75	*11.5
1906......	7	19	62			7.75	18.65	169.75	*06.4
1907......	4	12	72			9.00	13.85	179.50	*02.2
1908......	11	18	694			127.25	25.50	166.35	61
1909......	16	19	58			12.65	36.40	134.75	*17.6
1910......	18	22	450			56.25	21.40	158.95	22
1911......	20	19	816			106.40	23.05	163.75	51
1912......	15	24	1039			133.87	39.30	149.10	63
10-year average —* loss.	12.3	18.8	417			57.76	30.00	140.53	19.7

It took me several years to learn the lesson not to increase too rapidly, also to be sure that each colony had enough stores at the end of the season to carry them through winter.

The foregoing is a 10-year statement of the apiary of Mr. G. W. Fehleisen, who has already furnished some information in our columns. Studying his report, we find the average income of $27.76, all expenses paid, from an average of 12 colonies, or about $2.25 per colony. This after deducting all expenses and labor. The gross income is about $4.70 per colony. We would like to know how much of the expense is counted as labor. The selling price of the honey is about 14 cents per section.

It would be interesting to have comparative statements of the profits in producing comb and extracted honey under identical circumstances. We hope some of our experimenters will furnish them to us.

◆

"Unlawful Iowa Weeds and Their Extermination."—This is the title of a pamphlet (No. 5) published by the Iowa Agricultural Experiment Station of the Iowa State College of Agriculture. The weeds which land-owners are required by law to exterminate, in Iowa, are the following:

Quack grass, *Agropyron repens.*
Canada thistle, *Circium arvense.*
Cocklebur, *Xanthium canadense.*
Wild mustard, *Brassica arvensis.*
Curled dock, *Rumex crispus.*
Smooth dock, *Rumex altissimus.*
Buckhorn, *Plantago lanceolata.*
Wild parsnip, *Pastinaca sativa.*
Horse nettle, *Solanum carolinense.*
Velvet-weed, *Abutilon theophrasti.*
Burdock, *Arctium lappa.*

In addition to the condemned, the following are ranged among the noxious weeds:

Milkweed, or *asclepias*, morning-glory, wild timothy, squirrel tail or wild barley, foxtail, shoofly, chicory, dodder and wild carrot.

We are glad to see that none of our friends, the honey-producers, are included in the list. One, however, is forgotten which has richly deserved the name of noxious. It is the ragweed, which infests many stubblefields and roadsides. Its rank-smelling pollen causes hay-fever in one form. The only plant that will destroy it by overshadowing it is sweet clover.

◆

Observing Hives 250 Years Ago.—"After dinner, to Mr. Evelyn's; he being abroad, we walked in his garden, and a lovely, noble ground he hath indeed. Among other rarities, a hive of bees, so as, being hived in glass, you may see the bees making their honey and combs mighty pleasantly."—(*Pepy's Diary, May 12, 1665.*)

◆

Consular Report of Great Britain.—The current (Nov. 29, 1912) wholesale prices in London of Jamaica honey, in nickel-plated screw-cap glasses are: Per dozen 1-pound nominal, $1.70 for one dozen; per dozen 1-pound nominal, $1.64 for three dozen; per dozen 1-pound nominal, $1.58 for six dozen. For extra fine quality, 1-pound nominal, fancy glass jars, the price is $1.88 per dozen. For original casks, the prices are $7.30 to $9.25 per hundredweight. Terms are 28 days net.

While the present retail prices of imported honey are little higher than in 1911, the fact that the domestic production is so limited will undoubtedly very materially affect the wholesale rates.

Names of some London importers of honey are forwarded [and may be obtained from the Bureau of Foreign and Domestic Commerce].

◆

Quebec Provincial Association.—We take pleasure in giving our readers a portrait of Mr. A. O. Comiré, M. D., secretary of the Quebec Bee-Keepers' Association. This Association, organized 4 years ago, is quite flourishing, thanks to the efforts of a few devoted men. They are successfully fighting diseases, and have six inspectors employed. The annual meeting took place Nov. 13, with over 100 members present.

A. O. Comiré, of St. Francois du Lac, Que.

A very significant indication of the progressiveness of this Association is to be found in the following resolutions passed at this meeting:

"That the Minister of Agriculture be requested to take steps to amend the law in such a manner that it be made illegal to keep bees in hives with fixed combs or immovable frames, because such hives encourage foul brood, and because it is impossible to treat the disease conveniently in them."

"That the Minister of Agriculture be asked to cause the law to be amended so that inspectors may be authorized to destroy at their discretion diseased colonies which the owners refuse or neglect to treat according to their instructions, and that said owners may be indemnified according to the valuation made by the inspector."

"That inspectors who shall be nominated shall be compelled to undergo examination before a committee named by this society."

Mr. Sladen, of Ottawa, gave a lecture

on "Scientific bee-breeding, improvement of races and italianizing." Mr. Beaulne gave a talk on the fertilization of fruit blossoms by the agency of the bees.

The date of the next meeting is to be decided by the Board of Directors.

Bees Mentioned in Pepy's Diary.—Talking of the country above Quinsborough (Konigsberg, Eastern Prussia, on the Baltic Sea)......Mr. Harrington told us how they do to get so much honey as they send abroad. They make hollow a great fir-tree, leaving only a small slit down straight in one place; and this they close up again, only leave a little hole, and there the bees go in and fill the bodies of those trees as full of wax and honey as they can hold; and the inhabitants at times go and open the slit and take what they please without killing the bees, and so let them live there still and make more.—(*Pepy's Diary, Dec. 11, 1662, page 73, Vol. II.*)

It is interesting to notice that the above, written in England 250 years ago, concerns a country adjoining Russia, and that at the same latitude, 55 degrees north, and a few hundred miles east, are the best honey-producing districts of Russia, as will appear from the following consular report lately (November, 1912) published:

FOREIGN HONEY-PRODUCTION AND TRADE IN RUSSIA.

At the present time there is scarcely a province in Russia in which there do not exist, in one form or another, apicultural societies which provide special courses of study and lectures. In many districts there are specialists who devote their time to the spreading of information concerning rational methods. Much of this activity is due to the zemstvos—especially to those in the provinces of Viatka, Kostroma, Ufa, Kazan, Tula, and to the county zemstvos of Perm and Kolomna (province of Moscow). Unquestionably the most important factor in the growth of apiculture is recognition of the fact that honey is becoming more and more an important article in the world's market. At the beginning of 1912 the Council of Ministers approved an appropriation of $50,000 in the shape of loans to those engaged in apiculture whose honey-yielding crops were poor last year.

The provinces in which apiculture is most flourishing in Russia are Viatka and Perm; then follow Kazan, Kostroma, and Kief. In the first two there can be noted a real advance in apiculture among land-owners and peasants alike, which is due principally to the activity of apicultural societies. The Kungarskoye Society has a well-arranged museum, a model experimental apiary, a mechanical workshop for the construction of hives, and various other appliances. There are two apiarian instructors in the society.

The initiative and example of the Kungarskoye Society has been followed by nearly all the zemstvos of the provinces of Viatka and Perm, which also have instructors in apiculture. American frame hives of the Langstroth-Dadant type are rapidly taking the place of the old log and straw hives The demand for honey has also improved.

Apiculture in the province of Kazan has an industrial character. The same can be said about the province of Kostroma, in some of whose counties nearly all the apiaries are composed wholly of frame hives; the number of colonies in the province reaches 100,000, of which 30 percent are in frame hives. Adjoining the zemstvo apiary, in the city of Kostroma, is a school of apiculture having more than 100 pupils, principally peasants. In the province of Kief, apiculture has greatly advanced. Statistics show 238,000 colonies in the province, but probably there are more. The hives are nearly all of the old type.

The province of Voronezh has in its 12 counties more than 12,000 apiaries, most of which are owned by peasants, and are very well kept, as was shown at the Apicultural Fair held at Voronezh in September, 1912. Of the 4000 persons occupying themselves with apiculture in Moscow province, 90 percent are peasants.

In other provinces of Russia, including also the Polish provinces, apiculture has not advanced to such a pronounced extent, although it can be considered as fairly average, and the zemstvos are working hard to improve its condition.—CONSUL GEN. JOHN H. SNODGRASS, Moscow.

Bee Statistics for Austria.—According to figures compiled by the Bureau of Statistics of the International Institute of Agriculture at Rome, there were in 1910, 1,229,189 colonies of bees in Austria as compared with 996,139 colonies in 1900. This shows a gain of over 233,000 colonies, or about 24 percent—a gain of nearly 5 colonies per thousand inhabitants.

Austria had, in 1910, a population of a little over 28,000,000. There is, therefore, one colony of bees for every 24 inhabitants.

In the same country poultry, in 1910, reached a total of over 35,000,000. Let us for a moment compare the two figures. Figuring chickens at 50 cents each, and colonies of bees at $5.00, both of which figures seem conservative, for this country at least, we have the value of poultry as $18,000,000, while that of bees is $6,000,000, making the value of bees one-third that of poultry in Austria.

Sacbrood.—The above new name has been invented by Dr. G. F. White, of the Department of Agriculture, to describe the brood disease, which is neither American nor European foul brood, and in which the dead larvæ can be removed from the cells without rupturing the skin or body wall. "When thus removed they have the appearance of a closed sac. This character suggests thh name sacbrood."

The name is certainly appropriate. We wish the names of the other two diseases were as appropriate. In many cases these names lead people astray, and one has to be informed of the history of the discoveries to understand the expressions.

This "sacbrood" is said by Mr. White to be infectious. We are sorry to hear it. But if it is the same trouble which has previously been called "pickled brood," it appears to be of a very mild nature.

The circular concerning "sacbrood" is a six-page Bulletin, No. 169, of the Bureau of Entomology, and may be had by sending 5 cents to the Government Printing Office, Washington. Mr. White deserves the thanks of the bee-keepers for his untiring efforts.

Program of the National.—The National Bee-Keepers' convention will be held at the Grand Hotel in Cincinnati, Ohio, Wednesday and Thursday, Feb. 12 and 13, 1913.

The meeting will be called to order at 10 a.m., Feb. 12, when a Committee on Credentials will be appointed. The meeting will then adjourn for the filing of delegates credentials.

AFTERNOON SESSION—I P.M.

1. Appointment of a Committee on Resolutions, a Committee on Constitution, an Auditing Committee, and a Committee on Good of the Order.
2. President's address.
3. Vice-President's report.
4. Secretary's report.
5. Treasurer's report.
6. Directors' reports.
7. Legislative Committee's report.
8. Proposed amendments.

EVENING SESSION—7 P.M

1. Address "Needs of the Western Bee-Keepers"—Wesley Foster, of Boulder, Colo.
2. Discussion.
3. Address, "Why the production of comb honey should be increased"—Ernest Root, of Medina, Ohio.
4. Discussion.

MORNING SESSION—THURSDAY, 8 A.M.

1. Report of the Auditing Committee.
2. Amendments to the Constitution.
3. Incorporation of the National.
4. Election of Officers and Directors.
5. Report of Committees on Uniform Grading Rules—Buyers and Producers.
6. Discussion of Uniform Shipping-Cases.
7. Other business.

AFTERNOON SESSION—I P.M.

1. Address, "Some recent achievements with suggestions for 1913"—Dr. B. N. Gates, of Amherst, Mass.
2. Discussion.
3. Short talks by the delegates; each delegate will be called on for an address on any topic he sees fit to select.
4. Question-box.

After much correspondence the Grand Hotel, located at the corner of Fourth and Central avenues, has been selected as our headquarters. The hotel will hold about 500 people. The rates for rooms (European plan) are from $1.00 each person up, without bath, and $2.00 up with bath. The convention will be held on the second floor of the hotel. All sessions will be open to the public, but the voting will be done by the delegates.

Part of the Bee-Exhibit at the Pecos Valley Fair in New Mexico.

BEE-KEEPING FOR WOMEN

Conducted by Miss Emma M. Wilson, Marengo, Ill.

Honey Selling and Swarm Catching Made Easy

"Somewhere I have read that people who are badly affected by bee-stings never make a success at keeping bees. I do not see how any one could suffer more than I do in that way, and yet I have done very well in the bee-business, although I have never carried it on properly. It has been a side-line with me, as I have never had help or been able to handle the hives, to separate them, and do lots of things I should have done; partly because I had not the strength, as I am often ill, and partly because I have been busy with other work.

"I had 31 colonies at one time, but from some cause they fell to a much lower number; yet I have had a nice bit of spending money from my bees. Four years ago I had about 20 colonies, and sold over $60 worth of honey, besides giving away some and using some at home.

"I am more fortunate than some, in that I sell direct to my friends. I have been in the habit of driving to the hop fields and selling to the pickers, and taking a few sections to different people as they are wanted. They prefer it to what they buy in stores; they say the store honey is tasteless and thin. I get 20 cents, the same price that is asked by merchants.

"As stings disagree with me, I made a rig in which I can handle any kind of bees. You would probably be surprised if you saw me in my rig, but if you knew the kind of places where I am often obliged to go after swarms, you would not wonder that I made it.

"I had overalls made very large with straps over the shoulders, and with no opening except at the waist and the bottom of each leg, and these were closed with a draw-string. I could slip these on quickly when in a hurry, and could climb well. No danger of catching a dress on limbs of trees, and if a cluster fell on me, as they sometimes would, they could not find any place to crawl in, and generally they would all go back to the ones still on the limb.

"For face protection I made a wire head-rig with a piece of window-screening. This screening I bent over a crock, to get the right shape. Then I made a hoop from steel like that in a hoop-skirt, and sewed it near the bottom. To the bottom of this wire was sewed a cloth curtain that reached below my arm pits, and a draw-string tied it down close. I set in large sleeves, and with gloves I could handle a vicious swarm.

"Even if there was not much profit in it, I like to work with bees, and enjoy watching them take possession of a new home. As I am not very young (61), it has not been easy work for me to get a swarm from a high place alone.

"Often when reading the Bee Journal I think how much I would enjoy a chat with the different ones of the family, for so they seem to me. Perhaps there may be something in this letter that will be of benefit to some of my friends. We often think that what we do is very simple and not worth talking about, while another person would be pleased to know about it. I wish I could be with some good bee-keeper and see him or her handle bees. What I know has been learned from experience and by the help of the journal."

(Mrs.) Gertrude L. Goodwin.
Roy, Wash.

Your letter is very interesting. You have been able to get such good prices for your honey, why not devote more time to your bees, and less to other work?

Your bee-dress is a safe one, and I can imagine that you can tackle any cross colony, and feel quite serene. But why do all of that useless climbing? Why not clip your queens' wings? Then when those bees swarm, look for the queen in front of the entrance, pick her up and cage her, and the bees will come back when they get ready without any interference from you. Then you can let the queen run in with the swarm. Doesn't that sound lots easier than climbing high trees after swarms on a very hot day? Do you say you cannot clip a queen? No trick at all after you have clipped a few. Just try clipping a few drones' wings first if you feel nervous about it.

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Honey Confections

It is pleasant to note that the popular magazines are beginning to recognize the value of honey. Two recipes that here follow are taken from "Good Housekeeping," which prefaces them by saying:

"A pleasing addition to confectionery is honey, and it can be used to advantage in cake and pastry also. Because of the predominance of sugar in honey, less of the other sweetening substances should be used. A little salt improves all candy in which much salted butter is not used.

"Pineapple Marshmallows.—Heat two cupfuls of sugar, half a cupful of water, and half a cupful of honey over a slow fire. Then boil rapidly until it threads, and add 18 marshmallows, cut in pieces, and the beaten whites of two eggs. Beat until the mixture is creamy, then add one cupful of chopped candied pineapple. When quite firm pour into an oiled pan and cut into squares. Roll in cornstarch and powdered sugar.

"Honey Puffs.—Boil three cupfuls of sugar and one cupful of cream; when it will almost thread, add one-fourth cupful of honey. When it reaches the soft, ball stage, take from the fire and beat the stiffly beaten white of an egg into it. Beat one minute and add half a cupful each of finely chopped nut meats and chopped candied pineapple. Beat until firm and creamy, and shape into balls between the fingers with a wet napkin, then cool. A speck of salt adds to the flavor."

"Honey Gingerbread.—Four cupfuls

of flour, two heaping teaspoonfuls of powdered ginger, half a cupful of Sultana raisins, half a cupful of preserved cherries, a quarter of a cupful of chopped citron peel, half a cupful of butter, three-quarters of a cupful of honey, two eggs, a quarter of a teaspoonful of salt, and a quarter of a cupful of milk. Sift the flour, salt, baking powder and ginger into a basin, add the raisins, the peel, and cherries cut in halves. Melt the butter, honey and milk together in a saucepan, then cool and add to the flour with the eggs well beaten. Mix, turn into a buttered-and-floured cake-tin, and bake."—*Ladies' Home Journal.*

Plan of Requeening—Forming a Partnership

I would like to suggest to "Subscriber," page 343, a plan for requeening that is absolutely safe, and by which there is no loss of brood or stoppage of brood-rearing. The plan is not original with me, though I do not now remember where I read it.

When your queen-cells—however obtained—are nearly ready to hatch, form nuclei with bees obtained wherever you can best spare them. I use three or four shallow extracting frames, making the boxes for them myself from old dry-goods boxes, and I like rather strong nuclei.

In these allow your young queens to hatch and mate. But at the time that you give these nearly-ready-to-hatch, cells to nuclei, go to the hives which you wish to requeen, raise half or more of the brood, after the Alexander plan, *i. e.*, place it in a hive-body above the parent colony, with an excluder between, making sure that the queen and at least one frame of brood are in the lower hive. By the time your young queens in the nuclei are laying, this brood in the upper story is all sealed. Then shake all the bees from it in front of the entrance to the lower hive-body, exchanging the excluder for wire screen. A young queen can now be safely dropped into the upper hive-body, and by the time a sufficient body-guard of young bees has hatched to protect her, the old queen can be hunted out and removed from below. If you want to be very careful, replace the wire screen with the excluder for a few days. When the young queen has considerable brood, the excluder can be removed entirely, and there is no danger that she will not be accepted. It might be well to examine the lower hive for queen-cells.

Some advocate allowing the cells to hatch in this upper brood-chamber, and to mate from a rear entrance, but there are more young queens lost that way, though it is less trouble and expense in bees than to form nuclei, and it would be necessary to rear the brood in the hives to be requeened sooner. Otherwise if the excluders were left on so the brood, the bees from below could care for the brood, the young queen might be destroyed. Or if the wire screen were put in its place a good deal of unsealed brood would be lost.

Now, Miss Wilson, I wish to put to you a hypothetical question: Suppose an elderly lady, who has had years of experience in bee-keeping, but is hardly equal to the necessary work, wishes to take into partnership a younger woman to help with this work. We will suppose the home, with only these two women, 100 hives and fixtures, 20 colonies going into winter quarters, and to be increased indefinitely, also one of the best bee-locations, with a chance for a dozen or more out-apiaries in extra-good locations, and then the attendant hired help. Now, what kind of a bargain should these two women make?

It is not a case of renting the bees—half the honey and half the increase—but a partnership in which the older woman is, for the present, manager, and will work to the extent of her ability.

Now, please hold out the lamp of your experience and knowledge to illumine our bewilderment.

Delight.

As to the right adjustment between Mrs. A, who owns the bees, and Miss B, who is to be the partner, there are so many different conditions and contingencies that it is hard to make any very intelligent suggestion. If Miss B knows nothing about the business she might be glad to spend the season with no compensation aside from what she could learn. If she were a very competent bee-keeper, and did nearly all work, she might be entitled to the greater part of the proceeds.

As one way to proceed, let the time spent by Miss B be reckoned at a fair price, and let that be her pay. That would be entirely fair, but there would be no partnership in the case. To become a partner, Miss B must in some way depend for recompense upon the success of the business. Suppose, then, after reckoning as before what will be a fair remuneration for Miss B, we find what part of an *average* crop that will be, whether it be 25 percent, 50 percent, or more. For the sake of illustration, let us suppose it be 50 percent. Then let 50 percent of the crop be hers, whether the season be good or bad. In a year when the crop is twice as much as in an average year, she will get double pay. Thus it will be seen that her reward will depend upon the success of the season, making her truly a partner.

Not unlikely you will ask, "What is an average crop?" Please don't look in this direction for any light upon that question. The average for one locality is not the same as for another locality; indeed, the average for two bee-keepers in the same locality may be different. It can be gotten by footing up the crops of a number of successive years in the past and striking an average.

It is entirely possible that this solution of the problem may not at all fit the case you have in mind, and it must be left for you to evolve something that will entirely meet all the conditions.

Two Winter-Weather Recipes

In stormy, winter weather the lips are often inclined to crack, and the sensation is frequently very painful, especially on a frosty day with a cold wind blowing keenly. If, when this trouble arises, the lips are rubbed over with a salve of honey and glycerine mixed in equal proportions, it will restore them to a normal condition. As a preventive, a little rubbed on will keep the lips moist and hinder cracking.—D. M. McDonald, in *British Bee Journal.*

For chapped lips, dissolve beeswax in a small quantity of sweet oil by heating it carefully. Apply this salve two or three times a day, and avoid wetting the lips as much as possible.

To soften and whiten the hands try the following: Honey, one ounce; lemon juice, one ounce; eau de cologne, one ounce. Apply after bathing. —*Woman's National Weekly.*

Honey Muffins.—Sift two cupfuls of flour with two level teaspoonfuls of baking powder and a quarter of a teaspoonful of salt. Rub in two level tablespoonfuls of butter, two eggs well beaten, five tablespoonfuls of milk, and a third of a cupful of honey. Mix and pour into well-greased muffin tins, filling half full; bake in a moderate oven. These may be covered with fruit pudding sauce or whipped cream, and served for cottage puddings.—*Chicago Record-Herald.*

FAR WESTERN BEE-KEEPING

Conducted by Wesley Foster, Boulder, Colo.

Wrap Honey Neatly

During the winter days why not put the honey-house in order? Mr. Good-bee-keeper has his packing table covered with a large sheet of galvanized iron. At one end of the table is a roll of wrapping paper and a spool of twine. Comb honey or pails of extracted, can be quickly and neatly wrapped. In fact, the packages he wraps for his customers are as neat as those put out by any mercantile house.

Consumers, in these "high cost of living" days, like to buy of the producer direct. Such dealing will increase if every producer creates a favorable impression by tying up packages with neatness.

The Leaf Roller

The leaf roller, the spraying for which caused such a loss of bees in Fremont Co., Colo., is to be controlled by spraying the trees early with a soluble oil emulsion. This emulsion will be applied before the eggs begin to hatch. Since the eggs hatch just as

Some of the "Bad Lands" of Western Colorado; Nothing but Clay, Grass Will Not Grow. But a Mile or so from This is Some of the Best Land in the State

the leaves begin to open, and before the buds have opened, no bees will be killed. The Agricultural College, in its experiments, found that by thoroughly spraying with the soluble oil, 95 percent of the eggs were killed or could not hatch.

A Colony of Bees

A colony of bees is a collective organization of definite requirements, responding to the beneficial treatment and suffering from lack of attention. Its main needs are well understood, but some important ones of less prominence are neglected. The weather conditions affect the life of a colony very much. Early in the season some hives are well supplied with honey and pollen stores while others may be short. Some localities are destitute of early pollen from natural sources, and unless stored pollen is available, little brood-rearing will result. Many a bee-owner has wondered why his colonies do not build up early, when the queens seem to be young and vigorous. Honey may be supplied in sufficient quantities, but the lack of pollen in the hives and in the fields is very often the cause of this trouble.

Paste for Labels

A suitable paste for paper labels on tin cans is prepared from silicate of soda ½ ounce, cornstarch one ounce, and cold water 1½ pints.

Add the starch and silicate of soda to the water and stir until the whole is smooth, then place the vessel in another one containing a little water and heat until the starch is gelatinized. This paste should be made often, as it soon loses its sticking properties. This recipe came from Farmers' Bulletin No. 516, on "Maple Syrup and Sugar Production." The value of maple sugar and syrup in the United States for 1910 is placed above $5,000,000. New York, Vermont, and Ohio each produced more than $1,000,000 worth. Taking the whole country, the honey industry is far larger.

[We make excellent paste for labels for tin with ordinary wheat flour and boiling water. The flour is thoroughly stirred to avoid grumes or lumps. The mixture is kept hot and stirred until of nearly sufficient consistency. Bear in mind that it thickens in cooling. If to be kept for a few days, add a little powdered alum.—Editor.]

Moving Bees to Colorado

What do you know about the Salida country for bees, honey, and fruit? A friend of mine and myself are talking of going West.

Is there any trouble about shipping bees into Colorado from other States?

What is the value of bees in Colorado?

New Canton, Ill. W. H. Hyde.

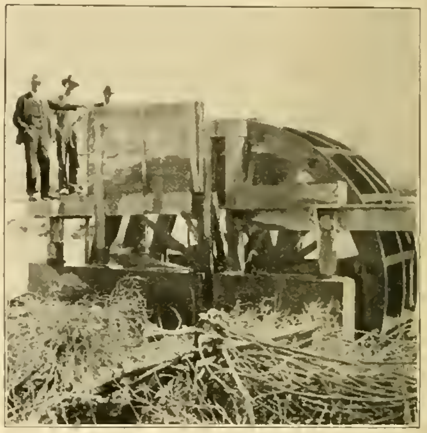
The country around Salida is above 7000 feet altitude, and for this reason is not desirable for bees or fruit. Some bees are kept there, but the territory is limited. It would be advisable for you to make as extensive a trip as possible before deciding on any place.

Our law on bee-diseases does not forbid the shipping in of bees, but in all cases of shipment, inspection will be done at the time of unloading, or very soon after. In districts where foul brood is prevalent there is not much danger, as we still have considerable disease to spread the contagion. But in the parts of the State where no foul brood exists a greater degree of care would be exercised. Should European foul brood be introduced in a shipment, it would be far better to destroy the whole shipment than to let it get started. European foul brood, so far, is unknown in Colorado. Our law admits of the destruction of material at the discretion of the inspector.

Bees can be purchased for $2.50 to $6.00, according to the hives they are in. Colonies in dovetailed hives, including one super, sell from $4.50 to $5.00.

If you have European foul brood in your county, you had better not ship bees here, as it would not be just to the bee-men of this State, and it would cause trouble. The same thing applies to American foul brood, of which we still have some except in a few counties of the State.

You will be welcome among us, as we still need more bee-men in some localities, but you would be more welcome to buy an outfit that is already here.



Water Wheel of R. W. Ensley at Read Colo. He Owns His Own Wheels and Ditches

Sweet Clover

Within range of nearly every Colorado apiary are many acres of waste land which should be producing nectar for the bees, by sowing sweet clover. The time has passed when sweet clover might be called a weed. The wide, sandy bottom lands of rivers make an especially favorable place for it to thrive.

Mr. Frank Coverdale tells in Gleanings in Bee Culture that sweet clover is worth $4.00 an acre for honey alone. Why cannot you make $100 by sowing 25 acres to sweet clover within range of your bees?

The Gunnison River in Colorado

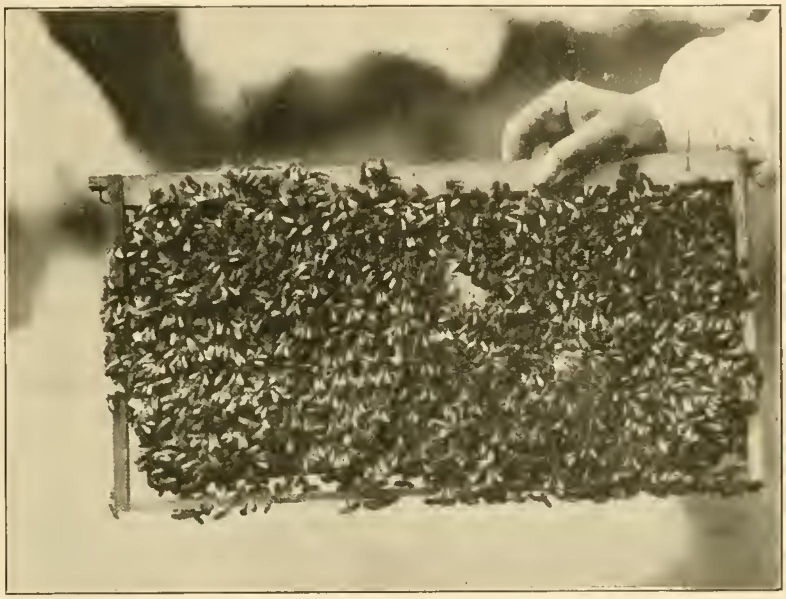
Hominy and Honey

The newpapers state that Joaquin Miller, the virile western poet, who is now past four score years, is living wholly on a diet of hominy and honey. Furthermore, he is an apostle of the new diet, every visitor being offered a large handful of hominy, dripping with honey drawn from an earthen jar. Let the good work go on, but however poetic, I do not care to eat hominy and honey with my fingers.

Fall Feeding

A bee-keeper who has an apiary located in a district where amber, inferior fall honey is secured, asked me what to do to ensure better wintering. His honey is not very suitable for wintering bees on account of early granulation. I suggested that he extract the honey from the brood-nest and feed sugar syrup. By blending the amber with white honey, he can dispose of it in the home market for 9 cents or more a pound.

The time to do this extracting is at the close of the harvest. One comb of honey may be left at the side of the hive for the bees' feed until the extracting is done and the feeding begun, when this comb may be removed. This feeding, if the weather is warm and the nights not too cold, will stimulate breeding, and the hives will be filled with young bees for the winter.



A Nice Comb of Bees.—Photographed by Wilmot R. Evans.

BEE-KEEPING IN DIXIE~

Conducted by J. J. Wilder, Cordele, Ga.

The "Home of the Honey-Bee" at Cordele, Ga.

The building and grounds represented by this photograph are the headquarters for my bee-business, and the apiary was the first one I established. At first it consisted of but one colony of bees in a badly decayed box-hive. At present it consists of 150 colonies of Caucasian bees. This is where I made the increase for my Georgia bee-business, and where thousands of queens were reared and mated.

The building is two stories high, and has nine separate apartments with a driveway in the center. It has nine openings or doors from which loading and unloading can be done. Each room is of great importance to the business. I feel that this is my "masterpiece."

The top story on the front side is my work-shop, and my work-bench is at the cluster of windows shown at the right end, which allows plenty of light and fresh air. This is the largest room or hall in the building. Here I keep my supplies in readiness for use. I generally call this my hall, because many interesting bee-keepers' conventions have been held in it.

Apiary Work for February

Usually we have considerable warm or sunny weather during this month, and we should take our first "peep" at the bees since we put them away for winter.

Pollen is coming in and the queens should be very active, with considerable brood in the nest. This is the starting point for every colony, and the starting point for apiary work. Therefore, it is very important to make investigation of every colony, and supply its needs. Queenless ones should be united at once with other weak colonies. Those short of honey can be supplied from other colonies which can spare it, by exchanging an empty comb for a comb of honey.

The brood-nest should not be disturbed much at this time except to en-

"The Home of the Honey-Bees" at Cordele, Ga.

large it, and only when the colony is crowded with stores.

In cases where the bees were not properly prepared for winter, it may be neccessary to feed some colonies, such colonies should be given a feeder placed in the super on top of the brood-frames.

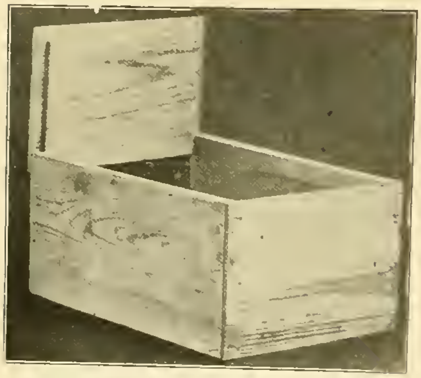
I have never found it necessary to feed for the sole purpose of stimulating brood-rearing, as in most locations there is plenty of pollen and enough early nectar for this purpose. Besides it would incite swarming at too early a period.

I do not advocate feeding bees any way, and would never do it if it were not for utilizing some inferior honey which I do not care to put on the market.

Hive Making

It is customary with some bee-keepers to make their own bee-supplies, especially the exterior parts, such as bottom-boards, hive bodies, supers and covers. It is a very good practice where a bee-keeper happens to be a good mechanic, with plenty of tools and time, and good soft lumber to work, such as cypress or white pine. Yellow pine is not very good for this purpose, as it is too hard and warps, and splits too much.

As this is the time of year when such work can best be done, we bring the matter up and produce a photograph illustrating how the bodies can be cut out and set up with accuracy and durability. The ends are beveled or rabbeted by machinery or by hand with a rabbet plane on three edges; the top edge is to receive a regular tin rabbet, such as those that are sent out with regular dovetailed hives, which makes by far the best frame rest. The rabbet should be ⅜ of an inch deep all around and as wide as the material is thick, so when nailed up there would be no projections. For the supers the rabbet should be but ½ inch wide on the top edges, so the shallow frames may rest on it, and the same for comb honey supers, as no tin rabbets are used with supers. The inside dimensions for the ends should be 12¼ inches. To get the outside dimension add twice the thickness of the material. The sides are cut off square 18¾ inches long. The material should be gotten out or bought dressed all around, and about thirteen-sixteenths of an inch thick, which is now the standard thickness, and 9¼ inches deep for hive bodies, 5¾ for shallow extracting supers or for supers for tall sections, and 4¾ inches wide for low or square sections. Short or narrow blocks may be nailed on the sides and ends for grip. The manner of nailing up is well illustrated by the cut. Nail from both ways, using as many nails as necessary for a good, durable body; 8 d flat-headed cement-coated nails are best.



The Right Way to Nail Hive-Bodies.

A Bee-Producer

Dear reader, I want you to turn back with me to Mr. J. K. Isbell's article on bee-production in our department, page 367 of the December number, read and re-read it until we have his method of bee-production well fixed in our minds so we can take it up step by step just as he outlines and carries it out.

Now is the time to take the first step in this management. It is needless for me to state what the results will be if all our colonies are boiling over with bees at the beginning of the first honey-flow, and this will be the case if we carry out his plan, which is simple. Large crops of honey will be harvested by every one who will do it. Besides, a large amount of increase will be made.

I have traveled extensively over Dixie, visiting hundreds of our bee-keepers, and I find that there are but two methods of production employed. One is the "let alone" plan and the other is Isbell's, or a similar one. The former is carried out more generally, and can we wonder at dissatisfaction? No, indeed.

Bees will never populate their hives properly without aid. It has been pronounced folly by some of our promoters to "pull back" great colonies in order to build up weaker ones, but it is logic to do it if it is done in time, when all colonies can be built up to something like uniform strength under which our greatest crop of honey is gathered.

I had the pleasure of visiting Mr. Isbell during the honey-flow, and saw his bees storing honey under uniform strength. No weak ones, and none ahead of the others, but all at work together. It was magic.

Mr. Isbell is the most wide-awake and practical bee-keeper I ever had the pleasure to meet. He has made a great success with but a small amount of capital, and we expect to hear more from him on bee-culture from now on.

CANADIAN BEEDOM

Conducted by J. L. Byer, Mt. Joy, Ontario.

Effect of Size of Hive on Spring Brood-Rearing

P. C. Chadwick, writing in Gleanings in Bee Culture in defense of using smaller entrances in hives than is advocated by many bee-keepers, incidentally touches upon the size of hives and their relative merits for brood-rearing in the spring. He says, "Here is also the secret of an 8-frame hive. Warmth is more easily preserved, and, in consequence, breeding is more rapid, thus filling the hive much sooner." While there must be a *limit* to the size of a hive for the economics of "bee house-keeping," in my limited experience it has been conclusively proven to me that the difference between a 10-frame and an 8-frame hive, the two sizes, friend C., is comparing, is not enough to allow the effect of heat on brood-rearing to be taken into consideration. By force of circumstances I have almost all sizes of hives in common use, from the 8-frame Langstroth to the 10 and 12 frame Jumbo, and every spring, *without exception*, the bees in the 8-frame hives are the last to be ready for the supers.

While, as I have intimated, there must be a limit somewhere on the size of a hive that the bees can use and not suffer in conservation of heat; just what that limit is I am not prepared to say, but it is a fact, in my case at least, that the colonies in the large hives are always ready for the supers first. The only explanation I can give is that the colonies with the large brood-nests always go into winter quarters with much larger clusters than the smaller ones. Given a large force of well wintered bees in the spring, it is surprising how they manage to overcome all obstacles in the way of cold, and proceed to build their brood up rapidly.

"Locality" can hardly help to explain the difference between Mr. Chadwick's experience and my own; for I would naturally expect less cool weather in California than in Ontario, at the time brood-rearing is going on at its most rapid pace.

Suggestions on Winter Work

"What to Do Each Month," is the heading of a new department in the Bee-Keepers' Review, said department to be conducted principally for the benefit of bee-keepers. Here in Ontario, during the months of January and February, the bee-keepers do about the same thing as their bees—practically nothing, in so far as real work in the apiary is concerned.

During February, if mild weather should prevail to any extent, cellar-winterers should look after their cellars more carefully than earlier in the season, provided, of course, their cellars are not self-regulating enough, so as not to need attention during any part of the winter. Mr. Sibbald, who used to winter hundreds of colonies in the cellar, has more than once not seen his bees from the time they were placed into the cellar until he took

Mr. Byer's "Lovering Yard."

them out again in April, and he always wintered successfully.

At the present time I have 250 colonies some 200 miles from my home, all wintering in three caves side by side, and nothing will be done in the way of ventilation from the time they were put in until they come out in the spring. While I cannot say how they will come out, I shall be well satisfied if they winter as well as they did for the past two seasons, when practically every colony came out in perfect condition. Of course, I am well aware that the majority of winter repositories are not adapted to a let-alone plan like that, and in most cases if a man is near his bees, he can help matters along by judiciously giving fresh air at night, during the last six weeks of the bees' confinement.

As to outdoor wintering, here in our locality, I seldom trouble myself even if snow does pile up around the hives in January and February—indeed, if the weather is *real* cold, the more snow the better. On rare occasions we get a day in February when our bees can fly, and then, of course, I like to have the entrances clear if possible.

To beginners I would say, do not disturb the bees in the least by lifting covers, packing, etc., at this time of the year, as you cannot do the bees any good, and may do them a lot of harm.

An Interesting Picture

A spendid picture that on pages 18 and 19 of the January American Bee Journal. Quite a number of the men shown there have at different times written to me, and while I have met but few if any of them face to face, a chance of looking at pictures is really the next best thing to having a hand shake. Not a bad looking bunch, either—really, they compare pretty well with an "Ontario crowd."

While on the subject of pictures, I might add that the one on page 13, entitled a "Michigan girl," certainly shows "nerve," as Mr. Miller says. But what does Miss Wilson mean when she says the proximity of the *man* may have something to do with the bravery displayed? While we know the dear creatures are "confiding," surely no woman could expect a man standing so *far away* as the one in the picture, to keep away cross bees. No, I maintain that the "Michigan girl" is entitled to all the credit, for if the man was duly interested in her welfare, he would be close enough to "swat the bee" should one be disposed to sting her.

LOVERING APIARY

"Asleep"—Another View of Mr. Byer's Apiary.
Mr. Byer tells us a deer was shot in the middle of the apiary last fall.

Tribute to Paul Mickwitz

It is a long time since the death notice of any bee-keeping friend came so unexpectedly and gave me such a shock as that of friend Mickwitz, in the January American Bee Journal. While he was with us in our home but a few days, in some way he seemed at once to gain the affections of every member of our family, and we have often spoken of his visit, in the family circle. Since he went back to Finland we have had more or less correspondence, and his letters were always a pleasure to read. We mourn for him as a near friend, and our most sincere sympathy is extended to the bereaved family.

The Weather—Prospects

The winter here in Ontario, to date (Jan. 11), has been warmer than the average, and much warmer than last year. Only once (Jan. 9) has it been real cold, that day being the first that zero was reached. For a few hours it was 15 degrees below, but it gradually moderated, and the next day it was 25 degrees warmer. Of course, the winter is "young" yet, and we may get enough cold weather before March. Judging by outward conditions the bees appear to be wintering nicely, and barring unforeseen developments, I look for fair wintering in general, wherever bees were properly fed in the fall.

Mice—First Trials at Photography

Some time ago I mentioned the necessity of being on the lookout for mice that are apt to bother bees wintered on the summer stands. In our own case this matter is generally looked after pretty well, as sad experience has taught us that one or two "deer mice" can do a lot of harm during the winter season. When leaving the Lovering yard last fall (100 miles from home), a careful look failed to show the signs of any mice, but as a precaution, several traps were placed under the covers of the packing-cases. During the last week in January, the friend on whose place the bees are, wrote me that the "deer" or "wood" mice had come to the apiary in large numbers during the past few days. As there were single fares on the railroads, I decided to take a run up there and have a look for myself, and while I found conditions not as bad as I expected, still quite a few mice were in the traps. I placed oatmeal and strychnine in shallow boxes on top of the packing, and I think all mice troubles will be settled for the present.

As I had just bought a camera, I took

LEWIS BEEWARE MEANS GOOD QUALITY, SCIENTIFIC WORKMANSHIP CAREFUL PACKING EFFICIENT SERVICE Send for Annual Catalog which will tell you who is your nearest Distributer. G. B. Lewis Company, Watertown, Wis.

it with me, and snapped several views of the yard. As I had never had my hand on a camera before, and was as "green as a cucumber" on all matters pertaining to photography, I was agreeably surprised to find that all films developed fairly well, although in the process of development one film curled up, and it will be noticed the fluid streaked the negative in the picture entitled, "Asleep." Never mind, better luck next time, and may be with perseverance I will yet be able to take pictures worth looking at.

SOUTHERN BEEDOM~

Conducted by Louis H. Scholl, New Braunfels, Tex.

This Department Editor's Holidays

During that time of the old year when "all the world rejoices and makes merry," this poor scribe was confined to his bed with a cold to begin with, followed with a case of that which is spelled "m-u-m-p-s" (something that he had escaped from as a boy). On top of this a severe case of "grippe" got a grip on me, or I got a grip on the "grippe," and to still make matters worse, our family physician told us that I was on the verge of a case of pneumonia. Making a strenuous effort to keep away from any more trouble, however, with a lot of careful nursing on the part of the bee-keeper's better-half, I am nearly well again and able to do some more scribbling.

I rejoiced during the holidays, although ill. If the Old Year was a good one, and crops were bountiful and the harvest profitable, we can not help but rejoice. If this were not the case, and we had suffered hardships, it is at this time we begin to cheer up because we have at hand a New Year with better promises in store than in the Old Year. And it is to be hoped that the year 1913 will be a bountiful one, for prospects are already very promising. However, it is a long time until harvest, and many a change may take place to make the outcome different from our expectations, yet we hope for the best.

* * *

Honey and Good Health

Speaking about my recent illness, it seems to me that it does not matter how well we care for ourselves and our bodies in the selection of foods, and the way we live regarding the contracting of diseases, often the most common ones. I have had first one thing and then another for the last several years. During my boyhood days I was always a robust and healthy fellow, with very few ills to complain about.

I bring this subject up because a number of persons have put great stress on using honey as a health food and a preventive of diseases. I have been a strong advocate, for many years, of a plentiful use of this sweet of Nature. We consume a large amount of honey in our family; but the judicious use of it in our food has not given much proof of what we have claimed for it.

However, there are exceptions to all rules, and honey in the daily diet is a delicious addition to the variety.

CONTRIBUTED ARTICLES~

European Foul Brood

BY L. HARRIS.

Seeing in your November issue of the American Bee Journal reference was made regarding the odor of European foul brood, I cannot resist the temptation to chip in when I see an old acquaintance called into question.

I have kept bees for more than 40 years, and my first acquaintance with foul brood was made over 30 years ago, when I kept bees in England, and the greater part of my experience was in fighting European foul brood.

I have the highest respect and admiration for Dr. Phillips, in the work he is doing in trying to stamp out this disease, but when he states that European foul brood has little or no odor, I entirely disagree with him. I have handled scores of hives infected with foul brood, and I do not remember ever having dealt with a case that did not have the offensive odor "in a more or less degree," according to the time the colony had been diseased. Often when in an advanced stage it was exceedingly offensive, almost unbearable. It is often compared to the smell of a glue-pot. I say the poorest quality of glue is quite fragrant in comparison with an advanced case of European foul brood. It can often be smelled several yards away from the infected hive, and if one gets close down to the entrance, and can exercise his olfactory powers, it can be detected even if there are only a few cells diseased.

During the last three years I have been acting for the Government of the Province of British Columbia as Foul Brood Inspector, and I have discovered a few cases of foul brood. The first case had been imported "directly" from eastern Canada by a settler. I was requested to examine these bees, and I immediately recognized in it my old acquaintance, *Bacillus pluton*, alias *Bacillus alvei*, I suppose I ought to say. There was no mistaking the odor; furthermore, there was the slight ropiness characteristic of European foul brood.

The next case was different. The outward appearance was very much the same as the European type, except that the diseased cells presented a greasy appearance. I was rather puzzled because any odor was imperceptible; it was the first case I had ever met which was not accompanied by the offensive smell.

It had the other characteristic always found in foul brood, the ropiness in a very marked degree. When the testing stick was applied the decayed mass would invariably stretch out, from one inch to an inch and a half before breaking.

The diseased larvæ which were not actually dried down were in the stringy condition, there was not the combination of different forms of diseased larvæ in the cells in this type of foul brood that we have seen in the European type, and we now know that this was the case of American foul brood, or Bacillus larvæ.

The European type is nearly always evidenced by different forms of diseased larvæ, one cell may contain a dead larva which is almost black and dried, retaining something of its original form, and being loose in the cell, can be readily shaken out. We have seen many of these dried-up larvæ outside the hive, having been carried out by the bees (black brood). Another cell will contain a dead larva which has turned brown or grey in color, and is of a soft, gluey substance, and if we attempt to remove it, will pull out in strings more or less. These are the cells which give off the offensive odor; another larva is of a pap-like or jelly-like appearance, and is encased in an extremely thin and tough skin, pickled brood, yet another may contain a hard cement-like substance adhering to the bottom-side of the cell, which is absolutely impossible to remove without destroying the cell (pickled brood, dried).

In another cell will be found dried scales, usually at the base of the cell; these have the appearance of little pieces of dried skin or scurf, and can be removed with the point of the needle. This is European foul brood in its most dangerous stages, and is easily carried from one colony to an-

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other in different ways, perhaps by the bees themselves. or may be by the bee-keeper.

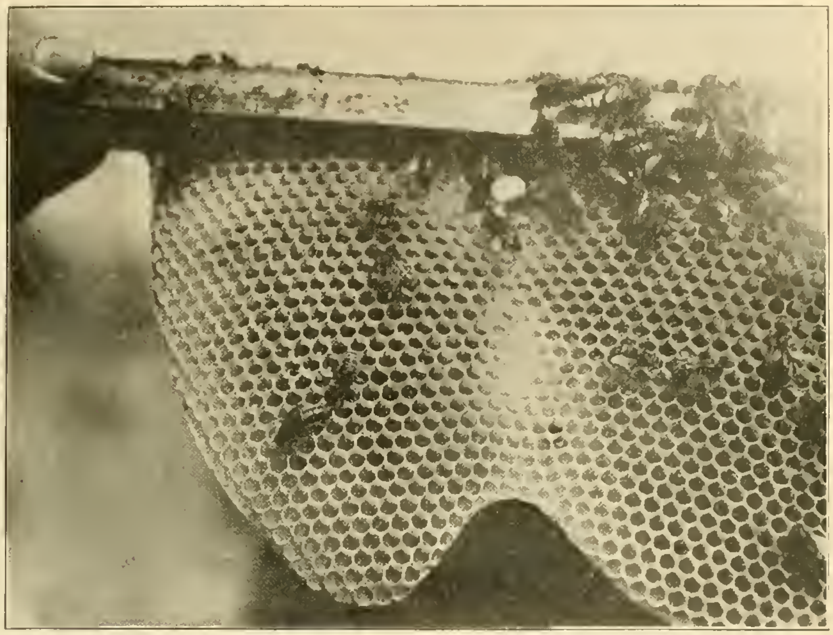
Vernon, B. C.

Excellent Portraits of a Laying Queen

BY JNO. A. DOUGLASS.

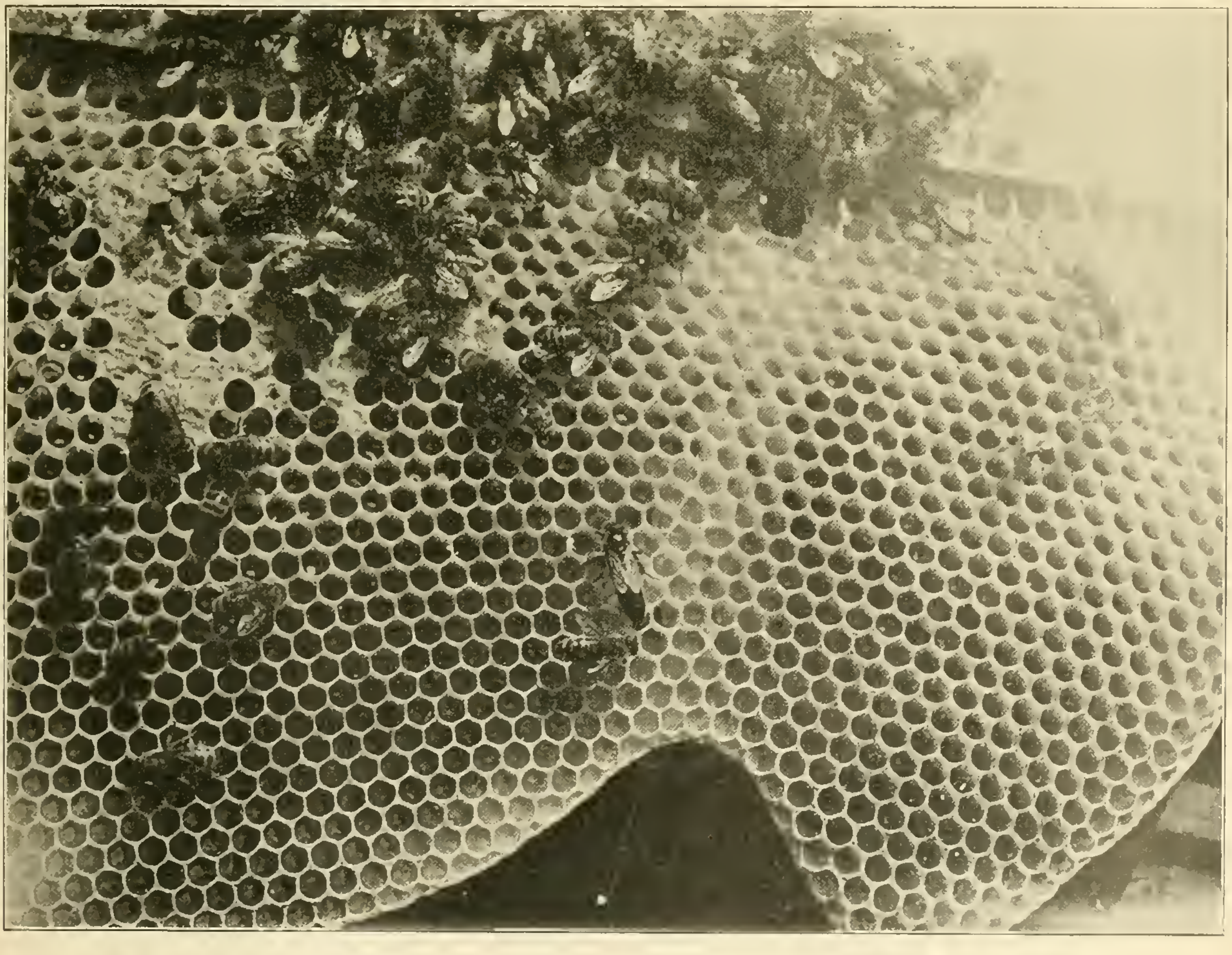
Appreciating the fact that the Bee Journal is desirous of collecting interesting photographs on the subject of bees, I am sending the enclosed, showing Mr. Frohliger, of Berkeley, Calif., demonstrating his colony of Italian bees to a newspaper reporter, and to some of the employees of the largest department store in San Francisco, "The Emporium."

It took Mr. Frohliger but a few minutes to persuade the gentlemen that his bees were stingless (?), as you will see in the picture they have succumbed to his arguments by accepting a handful. During his display of a week, in the grocery department, he kept a 10-frame standard hive on the roof for renewing his exhibition. This department store is in the center of San Francisco, and it is interesting to state that the bees stored and capped considerable honey during their sojourn.


No. 1.—Notice the Queen, Presumably Undisturbed by the Picture-Taker.

The other pictures, No. 1 and 2, show a leather-colored Italian queen wandering over the comb without any trace of excitement, while pursuing her vocation. Near the top of picture No. 3 she is seen with her body in a cell, depositing an egg, with her retinue of bees surrounding her.

I am a back-lot bee-keeper, and have 7 flourishing colonies in San Francisco. I enjoy the work, and find my health much benefitted in the pleasure of this pursuit. My one aim is to have an api-


No. 2.—Remarkable Photograph of a Queen on a Newly-Built Comb.

ary of my own in the country on a more elaborate plan.

San Francisco, Calif.

Demonstration by John C. Frohliger of California.

Bee & Honey
Specialist
John C Frohliger

More About European Foul Brood

BY F. W. L. SLADEN.

I was pleased to see Mr. Morley Pettit's insistence on bad smell as a frequent symptom of European foul brood, in a recent issue of the American Bee Journal. In England a stinking smell is considered one of the chief symptoms of this disease, while American foul brood is regarded as odorless. As European foul brood is said in America to have little or no smell, and American foul brood is the odoriferous kind, no little confusion has been caused on the other side, and English bee-keepers are inclined to think they are dealing with a different pair of diseases.

I recently had an opportunity of studying an outbreak of European foul brood among hybrid bees in England. As long as only a dozen or two larvæ were affected, there was only a slightly sour smell when the hive was opened, but when the disease advanced and 50 or more larvæ were rotting, an extremely strong and penetrating odor was given off. To me it was a "gamey" smell, like high meat, but opinions differ, and when I suggested to my assistant that it was an appetizing odor, he protested loudly, and had no word to sufficiently express its offensiveness.

Ottawa, Canada.

Loaf Sugar for Winter Feeding

BY EDWIN BEVINS.

I felt some reluctance about telling the story of 1912, but Miss Wilson's account of what occurred at the Dr. Miller place emboldens me.

In the fall of 1911 I packed 85 colonies for winter on the summer stands. The hives seemed heavy at the time of packing; but I fear that many were heavy with something besides honey. My winter losses amounted to 38 colonies. A few more were so weak that they died in the spring. My spring count was about 40 colonies.

When the days began to lengthen and the cold began to strengthen, last winter, and the snow got to piling up around the hives so that the entrances had to be cleared almost every day, I began to use cube loaf sugar. Unfortunately I did not use enough of it, and hence my heavy loss of bees.

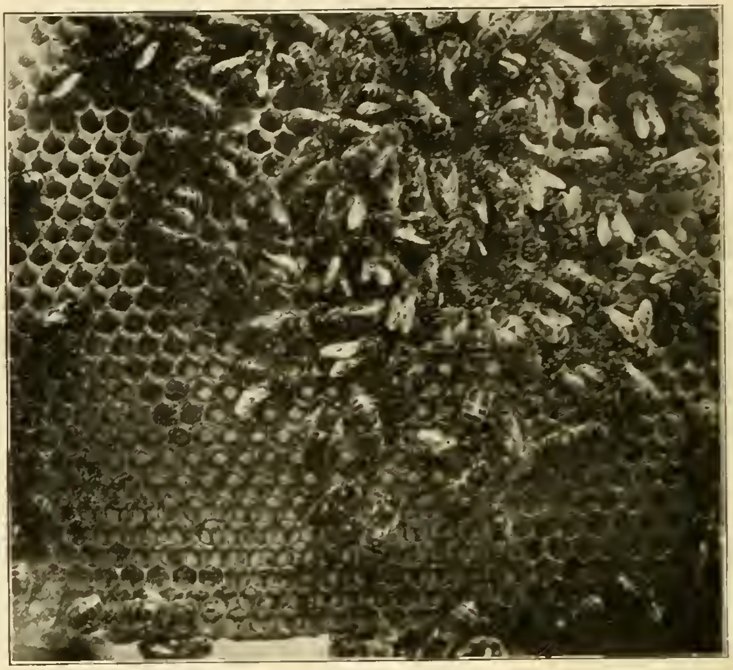
The season was a poor one for honey, and the surplus not at all satisfactory, amounting to about 2200 pounds; two-thirds of it was extracted. I made an increase of colonies this season, so that at its close I had 76 colonies. I sold and shipped 50 of these in November, and lost one by queenlessness. I have 25 packed on summer stands. I sent to Chicago and secured a hundred-pound drum of cube loaf sugar. A common tin wash basin holds about 4 pounds of it when a little more than level full. I filled a basin full for each of the 25 colonies. I gave the sugar a good sprinkling with warm water, and then dumped the basin across the center of the top-bars after lifting the back ends of the quilts and chaff cushions. Some of the hives were so heavy that they seemed "tied to the ground," but I served all the colonies alike.

Dr. Miller does not feed the heavy colonies, but he winters his bees in the cellar and I winter mine out-of-doors.

The above has been written mainly with a view to call the attention of bee-keepers to the use of cube loaf sugar as winter feed. I am persuaded that bee-keepers can save many colonies by its timely use.

Leon, Iowa.

[J. L. Byer tells us that up in Ontario they feed the bees as much sugar syrup as they will store in the brood-chamber before winter. They think it pays.—Editor.]



No. 3.—The Queen in the Act of Laying an Egg.

Notes and Sidelights From the New York State Bee-Keepers' Meeting in Rochester, Dec. 17-19, 1912

BY F. GREINER.

In an address on foul brood, S. D. House said that pickled brood was the fore-runner of foul brood and that the whole cause of the disease was "filth," claiming that some strains of bees, and particularly the native black or brown bees, were such poor housekeepers that they often allowed dead larvae in the combs a sufficient length of time to undergo the process of decomposition. Then the dangerous and destructive bacilli would develop spontaneously, and the foul brood originate.

This idea or theory was later combatted by Prof. Burton Gates from Massachusetts, who claimed that the foul brood could not thus originate; there would have to be spores or germs of the disease present; without them there could be no beginning of the disease.

Mr. House further said that the American Foul Brood was harder to eradicate than the European. An old discarded bottom-board had started the disease again in his yard, the bees gathering the propolis therefrom, which contained the spores.

This able speaker could not place emphasis enough on keeping Italian bees. It is the only sure way to dispose of the diseases, he said; and if he had a black colony and he knew the disease was in the State, he would at once kill the old queen and after ten days substitute a ripe queen-cell of pure Italian blood.

The foul brood inspectors of the State and others testified that we have no race of bees in America which is as immune from disease as the Italians, the Carniolans being little better than the blacks.

In a discussion as to how the floor over a bee-cellar should be built, when there was no fire kept in rooms above, some facts were brought out which might save experimenters many dollars and a deal of annoyance. In the first place, a floor should never be packed with sawdust. Mr. Clark Borodino and Mr. Kenyon, of Camillus, had the same experience, viz: the timbers which had been surrounded by the packing material had rotted out within four years, making it necessary to rebuild the floors, etc. They now use dead-air spaces using building paper in addition.

In the discussion of bee-cellars the out-door wintering problem was incidentally touched on. Mr. Holtermann laid down a rule on which I have, myself, been working for several years. He formulated said rule in these few words: "Bees should not be wintered indoors if they can be wintered successfully outdoors."

In a way Mr. House, of Camillus, endorsed this, although he stated that his bee-cellar wintered his bees with only 1½ per cent loss. He said that out-door-wintering was preferable on account of the protection the bees enjoyed during the breeding season (Spring,) after bees usually are brought out of the cellar; this of course on the supposition that outdoor wintered bees are well protected either by regular chaff hives or winter cases. No man could afford to pack his bees after their being wintered in a cellar, just for this "Spring protection."

Another reason why Mr. Holtermann has changed from cellar wintering to out door wintering is, the latter method gave him more leisure during the winter. He could pack his bees early, sometime in October; then he could turn his back to them 'till April or May; whereas if they were in an ordinary cellar, the latter would have to be watched more or less all winter; and then would come the difficulty of guessing the best moment to set the bees out, the robbing afterwards and other unpleasant features. I confess I have to agree with Mr. Holtermann and I find myself building more winter cases all the time. I expected to build a bee-cellar under my shop, but I doubt if I will use it for the purpose intended when I get it done. I am using my house cellar at present and have done so for many years.

The question of the popular section of the future received some attention but no agreement was reached although it cannot be denied that there is some clamor among the bee-keepers for greater uniformity not only as to sections, but as to all sorts of bee-keepers supplies.

We seldom have a bee-keepers' meeting without the question: how can I cure a lazy colony? Various remedies have been recommended. Removing a couple brood combs and substituting frames filled with comb or foundation was added to the list of remedies, also the changing of supers, i. e.—taking a super in which the bees are well at work and giving it to the lazy colony. It was considered an accepted fact that a loafing colony bent on swarming and prevented from so doing proves unprofitable and might better be allowed to swarm. Mr. Holtermann said he gave all his colonies a large entrance, as a means to prevent swarming, in other words he keyed up his hives with wedges one inch thick at the large ends. He left these wedges in summer and winter. It strikes the writer that, if it is a good plan to thus have hives arranged, he would make the bottom board so from the start and not bother with any wedges at all; make the space under the frames high enough to give this large entrance. In connection with the bottom board the writer also wonders how many have found it necessary, or at least desirable, to have the sharp point of a nail protrude above the long cleats of the bottom boards forming the bee-space under the brood chamber? A nail on each side protruding by ¼ inch will keep the hive body from sliding about when clamped to the bottom board by hive-staples, hooks or Van Deusen hive clamps. In moving bees on wagon or cars some such provision is needed and when using wedges as Mr. Holtermann uses them, his arrangement would be inconvenient in moving bees.

I want to mention Mr. Schamu's roller bottom-board which the inventor exhibited and explained before the convention. Dr. Schamu is most enthusiastic over his invention, says it will alleviate the annoyance of bees swarming and going to the woods; it saves a separate drone trap, because it is a drone trap itself, it provides ample ventilation for any occasion, has room to place feeders, prevents robbing, etc. It would lead too far to enumerate all his claims. After actual test in the apiary we will be in better position to judge as to the merits of this expensive addition to our hives.

Mr. R. F. Holtermann's address on extracted honey was listened to with much interest. Producing extracted honey is much safer than producing honey in the comb, because, he said, with only a moderate honey-flow a good grade of extracted honey could be produced, whereas if comb honey was produced under like conditions a poor article would be the result. Essentials in extracted-honey production were "strong colonies, ventilation, shade, enough room given in time." He prefers to use an excluder, does not extract from brood-combs, uses as little smoke as practicable. In the extracting supers he uses eight frames in place of the usual ten, and when giving more room he neither places the empty one under the full one, nor on top of it, but takes four frames from the full one, exchanging for empty combs, raises the four full combs to the new super to be given in such a manner that the full combs are above full combs and form a ladder for the bees to ascend. Mr. Holtermann prefers to extract after each flow, to keep the different honeys separate, but he takes care that the last extracting comes just before the close of the harvest. He does not like to open hives for taking honey when bees are inclined to rob.

During the swarming season the colonies are looked over once each week, and when there are indications of swarming, any queen cells found are broken down; for this purpose the bees are dislodged from their combs at least the greater part so that none of the cells may be overlooked.

When taking the honey, one comb is taken after another, the bees are brushed off and the combs placed in empty hive-bodies to be taken on a wagon to the extracting room. Two men work together removing the honey, one holding the comb, the other with a brush in each hand brushes off the bees from both sides of the comb with one operation. Mr. Holtermann uses a 12-frame extractor and finds a 1½ horse power gasoline engine too small to do the work. After extracting, the honey is pumped into tanks, holding 3000 pounds each, left to clear itself a few days, is skimmed off thoroughly, when it is ready to be drawn off into receptacles.

Mr. French answered the question, "Shall we advertise honey?" with an emphatic "yes" but qualified it in this way: It is out of the question for us to advertise as the cigarette man does, or the chewing gum man, or the patent medicine man, the shredded-wheat man and others, because there are not the profits in our business the other named people can boast of. We cannot afford to spend money that way; if we did, honey would be too high in price, the man of moderate means could not buy it. We will have to advertise in a cheap way. Exhibiting extracted honey in attractive show cases in the grocery stores, he thought, would be as effective as any available method. Then we ought to set forth the comparative value of honey in our local papers.

Professor Burton Gates of the Massachusetts Agricultural College spoke very interestingly about many different subjects. He said the stingless bee was a myth or falsity. There were, however, strains somewhat disinclined to sting. About brood diseases and germs, etc., he said: "The different organisms which produced the different diseases had been isolated and if planted each would produce its certain disease. Gnarly apples for instance were not wholly due to imperfect pollenization but also to a fungus destroying the pistil or ovules." Of the many appliances of later origin he enumerated several that were a

LEWIS HIVES ARE BUILT LIKE FURNITURE ARE PERFECT IN ALL RESPECTS
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great help in the apiary, condemned others that were not so perfect. He thought that a good wire imbedder (electrical) was a good thing. He gave the practice of having extracted honey tanks in a room below the extracting room (basement) a "black eye," said honey should be pumped up and stored in the attic where it was dry and warm. He mentioned a new bee candy which was suitable for wintering bees and shipping bees without combs. The formula of the candy was as follows: 7 pounds granulated sugar, 1½ pounds liquid glucose, 1½ pint water, ¼ teaspoon cream tartar. Let come to a boiling heat of 238 degrees F, mixture to be worked on a slab.

Objections were raised by bee-keepers to the use of glucose in the candy.

Naples, N. Y.

Big Horn Basin of Wyoming

BY B. F. SMITH, JR.

Upon request, I am going to tell what I know of this locality. Not both sides of it however, but just the bright side. What I might consider the dark side, no doubt a great many readers of the "Old Reliable" might consider the bright.

The spring of 1911, April 26, we landed in Cowley with a car of household goods and 17 colonies of bees. We were one week on the road, traveling 1110 miles from eastern Nebraska. The bees were very weak, but we commenced feeding, and all of them responded nicely and were in good shape when the honey-flow started. The flow continued until some time in September, and we harvested 3250 pounds of honey, and made three divisions and no swarms. The bees were wintered in chaff hives, and all but six came through nicely. Three smothered by chewing a hole in a sawdust cushion, and the sawdust blocked the entrance. Two starved to death, and one died without any apparent reason. This left 14, to which were added by purchase 18 colonies in 8-frame hives. The colonies purchased were in movable-frame hives, but combs were built on starters, and looked as if they had not been moved for several years.

June 10, 1912, we placed all the brood with the exception of one comb in each colony over an excluder. Fifty Italian queens arrived June 18; 50 divisions were made June 19, and on June 20 all the brood in the original 32 colonies was again placed over excluders. Fifty more queens arrived June 29, and another 50 divisions were made June 29. The first divisions were given two combs of brood and one of honey, as the flow did not start until June 21. The bees built up very rapidly, and the last of July we commenced to extract from the original stock. Of the 100 divisions made more than 90 of them were successful. But 2 or 3 queens were missing upon examination 5 days after making the divisions.

About Aug. 10, it became apparent that the first divisions were getting crowded. We had to send a hurry-up order for supplies, and extract one or two combs from the brood-nest. We ordered 50 full-depth bodies, and gave all of them full sheets of foundation, but even this was not enough. We went to the wood-pile and put in use some 200 frames that we had thrown away. We used starters in these, as we expected to discard them again. We helped the weak ones, and gave the strong foundation to draw out. It looked as though we would soon be short of room again, but the last of August we had some cool weather and the storing stopped.

We have for our summer's work 140 colonies which we expect to winter on the summer stands. They are all in good shape except 5, which we were re-queening just as the cold weather started, and do not think the queens ever mated. Ordinarily we have the finest weather up to Thanksgiving, but this year it has been cold and raw a great share of the time. We have saved about 200 combs for feed, and our crop is about 7000 pounds of extracted honey and 200 pounds of comb. The flow is without a break from June until frost, and even after frost the bees gather on nice days until we get a very hard freeze. Bees can be bought here for $5.00 in home-made hives, and should pay for themselves the first year, besides providing a new colony.

Our honey-producing plants are sweet clover, alfalfa, buffalo-berry, wild currant and gooseberry, and some years the wild licorice is an abundant yielder. The honey, when produced in new combs, is very clear and heavy, and we think it is the *very best* honey on the market.

Cowley, Wyo.

"GREASE-WEED AND A $16.50 APIARY. :

An apiary of 140 colonies, situated in an irrigated district of Wyoming. The natural growth from a $16.50 investment. Thirty-two colonies, spring of 1912, increased to 140.

Bees in Switzerland

BY ADRIAN GETAZ.

The information given by Mr. Widmer, page 345 of the December number of this magazine, concerning Swiss bee-keeping is very interesting and correct. There is however there, as well as here, quite a difference in localities. Dr. Miller and others have also noted some difference between the Swiss methods of bee-keeping and ours. These raise naturally some important questions.

ITALIANS VERSUS BLACKS.

Not only in Switzerland, but also in some other parts of Europe, the general opinion is that, taken altogether, the black bees are better than the Italians. I think that is an error, and the apparent inferiority is due to the conditions in which they were placed.

In the first place, the prolificness of a queen is very often injured by transportation through the mail, and the entire race is blamed merely because of an accidental circumstance. Then there is the question of mating. Throughout the whole of Europe the apiaries are small, numerous, and very close together compared to America. Furthermore, the majority of hives are skeps or box-hives, in which drones are reared in immense quantities; the "advanced bee-keepers" destroy their drones as much as possible, not wanting any "useless consumers." The result is what should be expected. The queens reared, mate with common drones of the neighborhood, and in a few years all traces of Italian blood disappear.

The third objection has been made here as well as there, very often. The Italian bees swarm too much, or rear brood at the wrong time, or something like that. This instead of an objection is an indication of the superiority of the Italian bees, and of the inferiority not only of the black bees, but of the

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Apiary of L. C. McCarty, of Nampa, Idaho.
"This yard was started in the spring of 1910 with 70 colonies. There are now 450 colonies in modern hives. $6000 worth of comb honey was sold in three seasons."

apiarist himself. The Italians are more prolific than the blacks. They soon have their hives full of brood, and then, having no more room, swarm. What else could they do? If their owner had given them a larger hive, they would have remained, built up a stronger colony, and given far more surplus than the blacks. But some apiarists, like many other men, cannot see beyond the tips of their noses.

MATING STATIONS.

Something has been said about establishing mating stations such as exist in Switzerland. The conditions with us are not the same. As stated above, the apiaries there are small, very numerous, and close together, Many have skeps or box-hives, producing a large number of drones. Under such circumstances the chances of having queens mated with the drones of the same apiary are very slim indeed. Furthermore, and worse yet, if the improved stock is of the same color, the mismating cannot be detected. Thus improvement is impossible. To obviate the difficulty, mating stations are established in isolated places, the best of stock installed, plenty of drones are reared, and the apiarists send their queens there to be mated. The charges for it are very moderate.

INFLUENCE OF DRONES.

This brings us to the question whether the worker-bees derive their qualities from the drone or the queen stock. From both likely, but I think chiefly from the drone. In the human race, and in all of our domestic stocks, the influence of both sides is equal, as far as we know. But it takes both parents to produce the offspring, no matter whether this is male or female. With bees it is altogether different. The unimpregnated queen eggs produce drones which of course derive their characteristics from their mother's stock. Impregnation has invariably the effect of changing altogether the sex of the eggs. Such being the male's power, it looks reasonable to conclude that the female is more like her father than her mother.

Occasionally hermaphrodites are found; that is, bees possessing organs of both sexes. Instead of being an intermediate or combination of both sexes, we find invariably some complete female organs associated with some complete male organ; for instance, a worker's head on a drone's body. This goes to show that where the drone influence reached it produced full female organs.

Coming to actual facts, we find Doolittle's assertions published two or three times in Gleanings in Bee Culture. He introduced the first Italian queens in his locality. All the mismated queens, either black or Italian that came during the first year, were necessarily producing bees of a first crossing. He says that the bees from a black queen fecundated by an Italian drone were invariably gentle, clinging to the combs, and in every respect almost like Italian bees. On the other hand, a cross between a black drone and an Italian queen gives workers usually very irascible, as many apiarists know only too well.

Frank Benton's experience corroborates that of Mr. Doolittle's. It was published in Gleanings some four or five years ago.

NON-SWARMING.

It is said that the improved blacks of Switzerland are almost non-swarming. I don't doubt it. But it is a question of management rather than stock. The European apiarists work exclusively for extracted honey. There is no difference in price there between extracted and comb honey. They use large hives, mostly the Dadant. Under such conditions very little swarming takes place, no matter what the stock of bees is. Mr. Dadant himself obtains as good, or even better results, as he can explain himself more fully.

Knoxville, Tenn.

Use of Smoke and Feeding Bees in Cellars

BY E. S. MILES.

Having noticed that smoke is not mentioned in connection with handling bees in cellars, and having nearly twenty years experience in cellar wintering I cannot help but think that many bee-keepers are losing the use of their smoke at one of the most needed places. There is scarcely a place where I value smoke more than in putting bees in and out of cellars. I am reminded of my early care and caution in getting strong colonies settled in the cellar without smoke years ago, by the query headed "A Problem In Cellaring" on page 28, issue of the American Bee Journal for January. But as I soon began to discard the bottom-board while the hives are in the cellar, as well as to increase my number of colonies, it became necessary to get them in with less time devoted to each hive. In answering the query referred to, Dr. Miller has given excellent advice as usual, but if I were to carry those bees in, I should not use a wet cloth, not because it will not be effectual, but because smoke and a little care in handling the hives is all that is necessary.

There is another important point in cellaring bees to avoid having them fly out ,and where conditions are such that they are likely to do so. This point is the time of day chosen to do the work. According to my experience the ideal time to cellar bees is when there is moonlight, and begin toward dusk in the evening. It is then light enough out of doors to see the hives and where to walk, yet the bees will not ordinarily take wing if handled carefully.

A candle may be set in the doorway of cellar, or wherever it will best light the cellar with a dim light. By having only about the same light inside the cellar as outside, the eyes are not required to re-adjust themselves every time one goes in or out, and one is able to work in a light not strong enough to induce the bees to take wing. I always want my cellar thoroughly aired, and as near the outside temperature as can be had, before beginning to carry in. Then I want two good smokers, with good dry fuel that will "keep a goin" while I carry in. If I leave off the bottoms I get along very well with one smoker for putting in the cellar. After taking one smoker down cellar and **thoroughly smoking the cellar**, I set the smoker up on end so it will keep going. I gauge the amount of smoke by myself. When the smoke becomes so dense in the cellar that I begin to cough, I kick the smoker over on its side thus checking the draft, until some of the smoke has escaped, when I put the smoker again in working order, keeping the air of the cellar about as

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smoky as I can breathe without much difficulty.

This cuts off the odor of angry bees and also sets the bees to making the scared hum one hears when they run to cluster. It is well known that when bees are disturbed, a certain number act as "guards" and rush to the entrance to attack whatever is disturbing their home. When they are thoroughly roused, a little of the poison is ejected which gives the peculiar odor of "angry" bees. This odor in a close place like a cellar or a cave seems to have a tendency to rouse up other bees, or make them worse if already partly aroused.

So instead of arousing the bees to a condition of defense or offense, it is better to give them a scare, use a little intimidation in the way of smoke it saves time and bees.

I pile my hives five to six high with 1½ or 2 inch strips under each end and bottoms off. Sometimes an extra cross colony gets aroused to the point of crawling out and jumping off when first set in the cellar, in which case I do not hesitate to smoke them enough to make them go back. If, accidentally, a colony or a pile is jarred so as to thoroughly arouse them, I shade my light to leave them in shadow, for a time, and also blow a lot of smoke alongside the pile. Of course I do not get hot smoke close enough to the cluster to scatter the bees or make them run off their combs, but use enough to thoroughly intimidate them.

Some may fear damage to the bees by this way of doing, but I can assure them no damage results, at least in "this locality," and I have used these methods on hundreds of colonies for over 10 years. I would not leave bottoms on and use screens on entrance unless mice were very numerous. I try to trap most of the mice in my caves, but I have yet to see any damage, excepting once in a while a little hole or two in a comb. Not enough to pay me for bothering with screens and nothing compared to the damage bottoms do in the cellar, unless one takes off the covers.

Feeding in Cellar.

Another question is, "Can I feed my bees syrup in the cellar?" The answer is usually "better feed them enough in the fall to last 'till flowers come in the spring." This is good advince but does not fully answer this question. Many times, for one reason or other, a colony or more, may not have enough, and if good comb honey is not to be had and one does not know by experience that he can make candy right, you can feed them syrup. if it is a fairly good colony of bees, and a cellar with temperature of 44 degrees or higher. One winter our bees were thought to have stores enough until in March we discovered one colony dead, and on examination found them starved. We had previously made a batch of hard candy, being very careful to make it just as directed, and lost every colony we fed with it, so we concluded to try syrup this time. We had a fair idea of how many light or doubtful colonies we had, so we filled super combs with good thick syrup, by means of a tin can with perforated bottom held two or three feet above the combs ,which were laid in a large pan to catch the drip.

We thus prepared a super with three combs containing about 10 pounds of good thick sugar syrup for as many as we expected to find light. After letting these set a few hours over some receptacle to catch what would drip off, we lighted our smoker, took our candle, and after smoking the cellar fairly well, and having our feeding supers near at hand we began at one end of the pile of hives and taking off the top one put it on the proper foundation for a new pile, just the strip across the next hive to rest on, and whenever a hive was lifted that we were in doubt of having plenty to last six weeks or two months, our assistant would put one of the feeding supers on the strips, then we would set the colony on top of the super, and so on until we piled over all the piles in the cellar.

The bees were in fair condition except some were short of stores, and as we handled all carefully and quickly, none were much aroused except those which were fed. Every bee man knows that when a bee gets a load of sweets, whether from a feeder inside the hive or elsewhere, the rest rush out as though their lives depended on getting out of the hives instantly.

Well, as soon as a bee from the cluster got a lick of that rich syrup there was a stampede for out of doors but as the feeding combs were in place of the bottom board and all tight between. they simply bumped their noses and stuck their toes into that syrup. The three shallow combs directly below the cluster caught the whole force as there was no way out of the hive except through this super. There certainly was quite a "hum" in that cave for a couple of hours, but after the syrup was taken up, all settled down and every colony came out fine shape. One or two even whitened their brood combs a little in the middle, in handling the syrup. Of course when we set the bees out we took them off of the now empty extracting supers.

If one has the bottoms on in the cellar it would perhaps be easier to remove the cover and put the feeding super on top, and the bees would be all the more certain to find it for it being on top, although all fair colonies will find it, as described above, in a cellar of proper temperature. If no empty extracting combs are on hand, one can, by using plenty of smoke, and working quickly, remove the outside combs, fill them and return them, but this would be too much labor perhaps except where one had only a few hives.

There is one way of feeding, which I believe, insures perfect wintering in 99 cases out of 100, yet I've never seen it mentioned in print. Set your colony in cellar, preferably well up from the ground, and use a deep entrance or no bottom, or the regular summer entrance may do, as it don't seem to matter so much about the entrance with this method. Now have your cover so it can be taken off easily and quickly and as soon as your colony is reasonably well settled in the cellar, remove the cover and lay enough good section honey directly over the cluster to run them until taken out of the cellar. This section honey does not need to be fancy, or number one or any better than culls, just so it is good ripe honey. Lay the combs down flat, the sections will hold the combs a bee space off the top bars, and after laying six or eight directly on the top bars. pile up a small pyramid if necessary, in order to get plenty on, then throw one or two thickness of heavy cloth over all, and let it fall over the sides of the hive 3 or 4 inches or more. A couple burlap sugar sacks or an old grain bag or two wil do.

In the spring set the colony on its summer stand with an entrance board reaching the ground, puff some smoke over the sections, shake what bees are clustered on them in front and replace the cover. A colony thus treated will come through in perfect condition almost invariably, but I confess I do not quite understand why.

I have often wondered how many who recommend hard candy have made and used it themselves. I do not doubt it **can** be made and used successfully yet as I said, I have found it very easy to lose bees when depending on it. As for me I would choose syrup in a good cellar in preference to candy if I had no safe honey to use.

Just one word on feeding, and the veteran can skip this: When you have fed your colony what you are quite sure is plenty, then feed it about five or ten pounds more. If you follow this rule many a colony will be saved that would not otherwise be.

Dunlap, Iowa.

Plural Mating of Queens

BY ARTHUR C. MILLER.

Mr. Scholl's inquiry concerning the mating of queens, in the September number of the American Bee Journal, deserves more than passing notice. That queens do mate more than once before commencing to lay is a fact so well established that it seems almost unnecessary to re-assert it. But some bee-keepers seem to be unaware of it, and so are not infrequently at a loss to account for the appearance of offspring of certain queens.

For those unacquainted with the

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laws of inheritance, it may be well to state that the offspring of a cross between two pure strains are always uniform and generally present an appearance half way between the two parents. The offspring of the first cross are designated as the “ F_1 ” generation. Mate members of the “ F_1 ” together, and the offspring “ F_2 ” are as varied as can be imagined; some are like one of the original pair, some are like the other, and others are like nothing in particular.

If, now, we consider a few hypothetical cases of queens mated more than once, we will get a little idea of the possible results to be looked for in actual experience. Take for example a thoroughbred Italian queen first mated with a drone of the same stock, and next with a pure black drone. Her offspring will be found as follows: Part of them will be typical of a pure Italian stock, and part of them will be typical of a pure Italian mated to a pure black; *i. e.*, all one, or all 2-banded, or possibly all 3-banded, but quite dark, the type of one or two bands, or of three dark bands being determined by the type of the Italian used. For instance, a pure golden mated to a pure black—or a pure Banat or Carniolan for that matter—gives uniform 3-banded leather-colored “Italians.”

If a queen of the same pure Italian stock be first mated to a similar drone, and second to a drone of mixed stock, the results are quite different. Part of the offspring—not always half, by any means—will be of the typical pure stock, and the rest will be all sorts from “near Italians” to “near blacks,” or whatever the alien blood was.

As to the cause of the plural mating of queens, the following hypothesis is submitted. A queen-bee, like most animals, has a period of “heat.” Before it appears, she shows no inclination to fly or mate, and after the period—which may last 20 days—is over she never mates. While the period lasts she may mate one or more times; how many times I do not know, but I do know of several instances where they mated three times. This repeated mating of some individuals differs in no wise from individuals of higher animals. Some individuals will allow the approach of the male but once, while others may mate several times before repulsing the advances of the male. And so far as known, the behavior has no relation to the virility of the male.

Providence, R. I.

* * *

The Use of Lime in Bee-Cellars

BY A. F. BONNEY.

Returning from the Des Moines convention, the writer got into a discussion with a couple of friends regarding the use of lime in cellars in which bees are kept during the winter. I contended that *air-slaked* lime ceases to take up moisture as soon as the chemical action is finished, and that if a cellar is well ventilated as it should be, lime is almost useless, as even freshly-burnt lime takes up moisture but slowly, owing to the slaked lime which covers the unslaked portion.

One of the gentlemen I talked with uses the air-slaked lime for no other purpose than to take up moisture, putting it in supers, over the frames, and on cloth. It merely serves as a pretty good packing material.

Desiring to fortify my position, I wrote to Parke, Davis & Company, one of the largest firms of manufucturing chemists in the world, and the chief chemist replied as follows:

“Your letter of Dec. 14, addressed to Parke, Davis & Company, making some inquiries regarding the absorption of moisture by lime, has been referred to the writer, who happens to be incidentally a very enthusiastic amateur bee-keeper.

“As I have quite a library of bee-books, and also read the current journals on bee-keeping, I recognized at once the source of this question. It has been a matter of some interest and occasionally of some amusement, to read the articles which appear in bee-journals from time to time regarding the use of lime in preventing dampness in wintering cellars.

“Ordinary unslaked or burnt lime is practically anhydrous, or contains only a very low percentage of moisture. As soon as moisture comes in contact with it, it is absorbed with great avidity, thus forming the hydrated oxide of lime, and the hard lumps crumble into a powder.

“A hundred pounds of first-class freshly-burnt lime will absorb many gallons of moisture either from the atmosphere or from the floor of the cellar. As long as the lime is not satisfied, it will continue to absorb moisture if any is present. But as soon as the lime is saturated with moisture and converted into powder, it will not absorb any more water. Of course it also has a tendency to absorb carbonic acid gas, and if enough of this is present the hydrated oxide of lime will eventually be converted into calcium carbonate or lime-stone. This is the chemistry which underlies the hardening of mortar and its conversion into a hard cement which holds bricks together.

“Turning now to the practical end of this question, there is no doubt if the hard, freshly burnt pieces of lime are scattered through a bee-cellar, that they will continue to absorb moisture until they are converted into powder. The more moisture it absorbs the more slowly will the process take place and the less efficient the lime becomes. When it is converted into powder it is of no use as an absorbent. This answers your question as regards renewal. A man cannot simply place a bushel, or a barrel, of burnt lime in a cellar and expect that it will keep it dry for an indefinite length of time. To be used effectually it should be scattered over the floor or placed around in different parts of the cellar in shallow trays, and as soon as it is converted into powdered form it should be thrown out and new lime distributed.

“One hundred pounds of lime, such as is purchased from the lime-kilns and shipped, contains from 10 to 25 percent of impurities, consisting of clay, magnesia, iron and other foreign substances, so that it will not absorb over 24 pints of water and 62½ pounds of carbonic acid.

“Even these results are somewhat surprising, and the inexperienced bee-keeper would undoubtedly feel inclined to say at once, ‘Here is a most effective and cheap method of removing all dampness and carbonic acid gas from my cellar.’ The effectiveness of lime for this purpose, if properly distributed as above indicated throughout various parts of the cellar in shallow trays, cannot be gainsaid. We must, however, reduce our estimate when looked at from a practical view-point; for the reason that freshly-burnt lime will absorb water very readily when first exposed, but its avidity for water, and its rate of absorption decreases steadily as the process proceeds. It would require many months for 100 pounds of lime to absorb all the moisture of carbonic acid gas necessary to satisfy its chemical affinity, and the process would finally become so slow as to be absolutely useless for all practical purposes.

“Just when it reaches the limit of practical and available absorptive power of either water or gas, is largely a matter of theory or guess work, and would depend upon conditions in the cellar itself. Very excessive moisture from continued seepage from the floor or walls would quickly use up the available power of 100 pounds of lime. On the other hand it has, I think, been fairly demonstrated that a reasonable amount of moisture in the bee-cellar is not in any way objectionable, and in this case particularly, if it were somewhat crowded, the principal value of the exposure of lime would result in the removal of the carbonic acid gas, which is well known to bee-keepers to constitute a disturbing factor, perhaps even more deleterious in its effects upon bees than moisture.

“Summing up the entire matter, I would suggest that the use of lime in bee-cellars can do no harm, and would probably be very useful and satisfactory provided it is properly exposed in sufficiently large quantities, and that the supply is renewed as soon as the greater portion of the hard, stony lumps or particles are converted into a powder. It might be well to remember in this connection also that this lime will continue to absorb carbonic acid gas long after it has lost the power of absorbing moisture. In fact, powdered lime rendered distinctly moist is better for the absorption of carbonic acid gas than the dry lime.

“Perhaps also a note of warning may not be amiss for some of the fraternity who desire to use lime. It is well known that lime, when reduced to

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a fine powder, is a caustic alkali, and is very irritating when taken into the nose, mouth or lungs of animals. It should certainly prove very much more irritating when taken into the numerous spiracles or breathing tubes of bees. One might set a lot of this irritating powder afloat in a bee-cellar if he happened to be a little careless in handling the lime in it."

J. M. FRANCIS.

This leaves but little to say. Mr. Francis explains fully that "taking up moisture with *avidity* does not mean taking it up with *rapidity*. Were it so, a cellar would become as hot as an oven, as will be apparent when lime is slaked hurriedly for mortar.

When lime is put into a box, as in the case of an X-ray machine, which has a cubic capacity of not over 50 cubic feet, it soon renders the air free of moisture, but when fresh air is constantly supplied, as it should be in a cellar, it will require large quantities of fresh lime to make a perceptible difference in the amount of moisture in the air, and its greatest benefit is its absorption of carbonic acid gas.

Buck Grove, Iowa.

Montana as a Bee-Country

BY WM. SCHULZE.

Reading in the Bee Journal about the merits and superiorities which certain sections and localities of some of the States are said to possess, I have not yet come across anything that could beat the prospects which await the apiarist in certain parts of Montana.

I settled here at Chance two years ago last fall, and bought from a number of farmers 60 hives of bees, which had never had any care or attention. As it was late in the season, and I was overcrowded with other work, I could not spend much time with them, and consequently did not expect many of them to pull through the winter nor do much the following summer. However, they surpassed my keenest expectations, producing 4000 pounds of honey besides 50 percent increase.

Owing to an unsual early approach of winter, I was unable to build a shelter, and had to let the hives stand out in the open. My own experience, as well as those of others back in Wisconsin, made me fear that I would lose almost the entire stock; for the winter was longer and more severe than any winter in this part of the State for the past 10 years. To my surprise I lost only 15 percent; of course, the colonies had been weakened considerably. Neverthless, this season they produced $600 worth of honey. One little, puny colony from which I did not expect anything, produced $10 worth of honey, besides enough to feed itself through winter.

The bees had to go a distance of 4 miles to gather the honey down in the valley, where thousands of acres of alfalfa are in bloom from June until September, with an abundance of sweet clover. Had I been closer to the alfalfa, and better fixed to take care of my colonies in an up-to-date scientific way, I should have at least doubled the amount. The nectar supply from the alfalfa and sweet clover is inexhaustible, and in 10 years there has been only one year when alfalfa was a failure from the standpoint of the bee-keeper, and that was caused by a bug destroying the blossoms. But even in such a year there is enough sweet clover and other nectar-bearing shrubs and plants to ensure against complete loss.

There is no fear of a drouth, for the country is well covered with irrigating ditches from streams which have always an abundance of water; neither are there any of the disadvantages and losses to encounter which sometimes accrue through periods of too heavy and continued rainfall. The country is free from bee-disease, and one of its greatest advantages is that there is no need of out-apiaries, as the honey-bearing crops are so plentiful that one apiary can be made to consist of as high as 500 colonies.

So far, I have sold most of my honey to the local dealers. I intend to produce extracted honey more extensively, as there is a growing demand for it, and some of my experiments have shown that I can harvest $20 worth from one colony. As I am going to move down into the valley this winter, and will be considerably better prepared to take care of my bees, and to conduct my business on more improved lines, I expect to effect an increase next year over this year's profit of at least 100 percent.

What do Wisconsin bee-keepers think of the prospect? Wouldn't some of my bee-keeping friends back there who are discouraged by frequent failures, and have struggled for many years with adversities of climate and conditions, vainly striving to win fame and fortune in the field of apiculture, wouldn't they be pleased or willing to change their unkind and unfavorable surroundings by emigrating to the beautiful and nectar-laden alfalfa valleys of Montana?

Chance, Mont.

DR. MILLER'S ANSWERS

Send Questions either to the office of the American Bee Journal or direct to
DR. C. C. MILLER, MARENGO, ILL.
He does NOT answer bee-keeping questions by mail.

Eight and Ten Frame Hives for Wintering

I have 7 colonies of bees, 4 in 8-frame hives and 3 in 10-frame. At 1:30 today the bees of all the smaller hives were flying while the others were not. I examined them, and found one of the colonies dead, though there was about 30 pounds of nice honey left. In the dead colonies there was a double handful of bees, and lots of drones.

I cannot account for this. It looks as if 8-frame hives were better for wintering in northern Iowa than the 10-frame. All the colonies had plenty of honey. IOWA.

ANSWER.—The number of colonies is rather small to deduce a general rule; but even if you had a larger number it is not a dead open-and-shut affair that the smaller hives are better winterers. As to that dead colony in the 10-frame hive, it's about certain that the size of the hive cuts no figure. They had no normal laying queen, and had not had one for weeks, for the dead bees were few, and part of them were drones. You have left then the 4 8-frame hives and 2 10-frame hives, and you are evidently of the opinion that the bees in the latter two were in too poor condition to fly while the bees in the smaller hives flew well. Well, as there were only 2 of them, it might just happen that those 2 were poorer than the others. But did it never occur to you that it might be that those 2 colonies did not fly *because they were in too good condition to fly?* That would be my guess. December 28 the bees had not been confined very long, and those 2 colonies were doing so well that they did not yet feel the need of a flight. At any rate, wait until spring, and then you can tell with more certainty which has done the better.

Sugar Syrup With Tartaric Acid

Yesterday (Dec. 30) I was examining the colonies I am wintering in the cellar, and I found one that I concluded had starved. There was about 12 pounds of sugar in the combs candied hard. My record shows that on Sept. 20 this colony had about 15 pounds of honey. I fed them 20 pounds of sugar syrup with one ounce of tartaric acid to each 10 pounds of sugar. I am afraid some of the rest of my bees will go the same route. One dislikes to lose them after feeding and giving them the best care one can.

I have read of some who feed sugar syrup without using acid, and do not have any trouble, and it seems that there is little or no trouble where acid is used. Last fall some of my bees were carrying out candied sugar in a week after I fed them.

It is possible that I have not been making my syrup right. The way I made it was to place a boiler of water on the stove and let it come to a boil, then add the acid and stir it well. I then set the boiler off the stove and stirred in the sugar. I used 2 pounds of sugar to one of water. OHIO.

ANSWER.—I must say there is something I don't understand about this sugar-acid business. There are those who, as you say, insist that no acid is needed, and they are very emphatic about it. A very few say that the sugar hardens in spite of the acid, and you are one of the unfortunate few. The time and manner of feeding may have something to do with it. If you feed as early as August or the first of September, and use more water than sugar, I don't believe acid is needed. Even if you feed heavier syrup, if you feed it slowly, there should be no trouble. But with late feeding of thick syrup, I should feel safer with the acid. I hardly see why you should fail; you used more acid than I ever used, and I never had any trouble, although I have had much experience. Still it is possible that the mode of proceeding may have something to do with it, and I'll tell you how I proceeded, when I fed late with heavy syrup: Water was put into a vessel on the stove, and when at or near the boiling point sugar was slowly stirred in at the rate of 5 pounds of sugar to a quart of water. The stirring was continued until the sugar was dissolved, so that the sugar might not settle to the bottom and be burned. When the sugar was dissolved, an even teaspoonful of tartaric acid for every 20 pounds of sugar, previously dissolved in water, was stirred into the syrup, and it was taken from the fire. I would hardly suppose that your reversing the order would make any difference; still it might.

Cappings Melters

1. Is there any melter that will do fast work and not injure the flavor of the honey that goes through it ?

2. In Feb. 15, May 1, and Nov. 15 (1908), issues of Gleanings in Bee Culture there were three melters described. Are any of these satisfactory ? The honey that comes from the melter would be put in with the rest and bottled for a fine trade. Montana.

Answers.—1. Maybe; but as the Scotchman says, "I hae ma doots." To do fast work there must be considerable heat, so that at least a little of the fine flavor would be hurt.

2. Carefully managed, they may be as good as any. But for the finest grade of honey you will likely find it best to keep out any that has been heated with wax. Still, I may be mistaken about this, and if experienced producers say they secure honey from melted cappings not at all affected by the melting, I am ready to stand corrected. The large experience of Editor Dadant will enable him to give valuable information. [Having additional inquiries on the subject, we hope to go into the matter at length in a month or two.—Editor.]

Clipping Queens' Wings—Miscellaneous Questions

1. If the queen's wings are clipped and queen-cells are cut out every 10 days, will that prevent swarming ?

2. When a clipped queen goes with a swarm and finds she cannot fly, will she return to the hive, if it is low on the ground so she can crawl in easily ?

3. Is the quality of honey of the Carniolans better than of other races of bees ? I have been told so, and that they don't gather honey-dew as much as the other bees. Is there any truth in the statement ?

4. The other day a book came to me from a friend in Missouri. It was Dr. Jones' book on how to prevent swarming by operating. What do you think of the plan ?

5. Don't you think there is a tendency to produce extracted honey instead of comb ? It looks that way to me. Extracted honey has put the price of comb honey down so low in this vicinity that it hardly pays. Illinois.

Answers.—1. The clipping of the queen's wings will not make a particle of difference about a swarm issuing. A swarm will issue exactly the same as if the wings were whole. Cutting out queen-cells every 10 days may make a great deal of difference and it may make very little. In the ordinary course of events a prime swarm is likely to issue when the first queen-cell is sealed. If, at any time before this, you cut out all cells that are started, the bees will be likely to start fresh cells, but this second time they may not wait for the sealing of cells, and the oftener you cut out cells the more eager they may be to swarm, so that finally a swarm may issue immediately after you have cut out cells. Sometimes, however, cutting out cells once or twice in the season may prevent swarming entirely. I think the character of the bees has something to do in the case, some bees being much more given to swarming than others.

2. Generally she will; but sometimes she may wander off or enter the wrong hive.

3. The quality of honey gathered from the same source will no doubt be the same, no matter what bees gather it. I don't know whether Carniolans are less inclined than others to gather honey-dew. I didn't know it was claimed for them.

4. I think that shaving off the heads of all sealed brood will be likely to prevent swarming; but I don't suppose many would want to use such a plan.

5. The tendency toward extracted or comb honey is somewhat pendulum-like. Not so very long ago there were some who urged that more attention should be given to extracted, and just now it is the other way. Each one must judge what is best for himself for his own market. The scarcity of an article is generally supposed to raise the price, and if all others in your region extract, that ought to make comb scarce and high. If, however, others find they can make more extracting, perhaps you might, too.

Color of Hives—Overstocking—Winter Feeding—Drone Comb

1. My bees are wintering very well. I think. We have been having some frost every night the past two weeks Which is the best, to paint each hive alike or say three different colors ? Paint one super white, one red, and the other blue, and then mix them together when they are put on the hives ? Some think that when the hives are all the same color the bees will lose their location.

2. Is there any way to judge how many bees to keep at each apiary ? Two years ago I had an apiary of 45 colonies; they gathered 22 cases of honey, and they had enough to winter on. A bee-man told me he thought I ought to keep 150 colonies here at this apiary. Would I have gotten as much honey, per colony, as I did with the 45 ? Then there would be the extra honey for the 150 colonies to live on. I would have more bees to store honey, but they would have to have honey to live.

3. Which is better, to feed bees liquid or granulated honey in winter putting the granulated honey right above the cluster of bees ? I do not think it would start robbing so easily. I leave my bees on the summer stands, and close the entrances to 2 inches.

4. Do you think it pays to put on queen-excluders where one runs for extracted honey ? I have an odd sized hive now, but I hope to get the 10-frame standard size in the near future, and want things up-to-date.

5. How many drone-cells do you think it is necessary to have in each hive ? Some of my hives had so much drone-comb that I melted some of it up and put in foundation. Arizona.

Answers.—No doubt the bees are guided somewhat by color, as you will easily see when the sun shines brightly on the front of a hive which is nearly always in the shade. The bees plainly show by their hesitation in front of the hive that they note the difference. So differences in color ought to be a help about recognizing their hives. But I suspect that they are guided a good deal more by form than by color. I have had two or more nuclei in the same hive, and with entrances only 6 inches apart I do not believe there was as much chance for entering wrong hives as there would be in separate hives 4 feet apart in a straight row. For in the latter case all would look alike, while in the case of the nuclei in the same hive the entrances at different parts of the hive gave the bees the advantage of the different form at or about the entrance. A tree, a little bush, or a post, in front of a hive will, I suspect help more about locating entrances than all the paint you can put on the hives.

2. I have been trying for 50 years, right in the same location, to learn how many colonies could be kept without overstocking, and I don't know yet One great trouble is that no two years are alike as to yield. In a poor year there may not be nectar enough for 25 colonies, while in the very same spot a good year may give abundance for 100 colonies. And you never can be entirely sure in advance whether the year will be good or bad. If the 22 cases made by your 45 colonies were 22 cases of 24 sections each, that would be about 12 sections per colony. If that was all the surplus that could be stored by decently good bees, it is doubtful that a larger number would have given so very much more For you are right in counting the honey gathered by the bees for their own use, and it is generally a good deal more than the amount they put in supers. Suppose it takes 200 pounds per colony for their own use, and that each colony yields a surplus of 100 pounds. Each colony would then gather 300 pounds, which would be 13,500 pounds for 45 colonies. Now suppose the field yields 15,000 pounds. There would be 1500 pounds that would go to waste, and you might just as well have 5 colonies more to gather it all. But suppose you plant 150 colonies. They would need 30,000 pounds for their own use. But the field yields only 15,000, and so you would get no surplus and would have to feed 15,000 pounds.

3. That's hardly a fair question, for there ought to be no feeding in winter. But where there has been such bad management that certain colonies must be fed in winter or starve, then the best thing is to give them combs of sealed honey. If these are not to be had, and it is a question between liquid and granulated honey, then like enough the latter should have the preference, placed as you say directly on the top-bars over the cluster.

4. As things are generally managed it pays to use excluders, for without them the queen will be likely to lay in the extracting supers. E. D. Townsend, however, succeeds without excluders. When a second super is needed, instead of putting it under the first he puts it on top. He claims that if the empty super be put immediately over the brood-chamber the queen will be likely to enter it promptly, whereas if it is put on top, the queen will not go up through the partly-filled super.

5. I doubt that it is really necessary to have any drone-comb except in those hives which contain such good stock that you want to rear drones from them. Some, however, believe in having perhaps 2 inches square in each hive.

Yellow Flowers—Yellow Honey—Requeening—Comb or Extracted?

1. I have been told yellow flowers tend to make cappings yellow too, or, in brief, that the bees will cap honey from yellow flowers with a yellow capping. If this is true, please explain.

2. To requeen all or part of an apiary with ripe cells from a breeder, I thought of dequeening about Aug. 1 and introducing ripe cells. The bees hatched from eggs laid by the old queen from Aug. 1 to 14 (when the new queen would begin to lay), would not, I think, aid materially in the harvest, which is about July 10 or 15 to Aug. 25 or Sept. 1, How would this work ? and how are cells to requeen with ?

3. Editor Root, in Gleanings in Bee Culture, bewails the rush of producers to extracted honey production, predicting a scarcity of comb in the near future. Should this hinder or deter me from going into extracting if I dispose of my whole crop direct to the consumers, and accompany it with a printed and verbal propaganda of education ? Really, if a bee-keeper is careful in his producing, extracting, liquefying, etc., I can see no reason why any one should prefer comb honey to extracted. It seems to me that one big mistake of most honey producers is to ship out and neglect the consumer trade near home; however, I noticed several articles in journals on the subject of developing the home trade. Colorado.

Answers.—1. Yes, it is true at least of some flowers, dandelion, for example. I suppose the bees get the yellow coloring from the honey or the pollen.

2. It ought to work all right. Requeening with cells is all right, only, of course, there

will be less break in the rearing if laying queens are given.

3. You have got the thing down pretty fine, and you are dead right in your views. If you are producing a fine brand of extracted honey, and have a satisfied lot of customers, don't you go to fooling with comb honey.

Using Sections Again

Sections from which the comb has been cut have marks of the comb attachment around the inside, what would be the result if such sections were placed in the center of a super over a strong colony of good section workers; it being understood that no foundation is put in, nor any change made after cutting out the comb? New Jersey.

Answer.—I never tried it, but my guess would be that although the bees might not follow pattern closely, they would generally come near enough to it to make straight sections between separators. Of course, the more of the old comb left the more effect it would have. If you try it, please report.

Plan for Requeening

I wish you would publish, during this winter, a statement on what you think is the best method to rear queens for requeening. I will give my idea:

In the spring, when my bees are well built up and strong, I would get a nice lot of queen-cells capped over, select cells from my best honey gatherers, put them in a queen-nursery, placing this in a strong colony to hatch, and take care of them until wanted for introducing into colonies, which I will make queenless a few days before.
New York.

Answer.—Your plan, if carried out correctly, ought to work all right. Although I don't believe it is quite so well to have queen-cells in a nursery as to have the bees closely surrounding the cells at all times, yet the nursery is quite a convenience. The Stanley nursery has the advantage that the bees are not excluded from the cells, as they can pass readily through the excluder-zinc of which the cages are made. If you use a nursery that does not allow the bees free access to the cells, then it is best not to cage the cells until nearly time for the virgins to emerge. It is just possible that you would do as well to give cells to the queenless colonies as to wait for the hatching.

Clipping Queens' Wings

Clipping queens' wings, as I have repeatedly read in your journal, is in vogue among American bee-keepers. I would like to make a trial of it in the spring, but have some misgivings. Can one be sure that the issuing swarm will find and cluster about the queen, which, perhaps, has fallen upon the ground a few steps from the bee-house? Or can it also happen that the swarm does not find the queen, and consequently returns to the hive from which it issued?
Germany.

Answer.—When the swarm issues, of course the clipped queen falls on the ground. If there is no one on hand to pick up the queen it very rarely happens that the swarm finds her and clusters about her. Indeed, in all my experience I never knew such a case. Sometimes the queen will be found at a little distance with a little cluster about her, perhaps as big as a walnut. Generally however, she will be entirely alone. The swarm will return to the hive, perhaps in less than five minutes, after circling around in the air for a little time, and will pay no attention to the queen, even if she be quite near the hive on the ground, its only desire apparently being to hurry back into the hive as soon as possible. Often the swarm will cluster on a tree, just the same as if the queen were along, and it may remain clustered there 5, 10, 15 minutes or longer. In most cases the queen will find her way back into the hive if she is left to herself. The business of the bee-keeper, however, is to pick her up, put her in a cage, move the old hive away, and put an empty one in its place, and then when the swarm returns to let the queen run into the hive with the swarm.

In Germany, where you use bee-houses, it would, I suppose, not be possible in many cases for the queen to find her way back into the hive; so it would be necessary for some one to be on hand at the time of swarming. Even so, it ought to be less trouble than to manage a swarm whose queen's wings are not clipped.

REPORTS AND EXPERIENCES

Queen-Rearing

On page 371 of the December issue, under caption of "Queen-Rearing Pointers," Frank F. France says: "This device, as pictured here, is the invention of H. Perkins, of Artesia, Calif., and is the best device I have yet seen to do the work required," etc.

We used this method before Mr. Perkins was heard of here. I am almost sure it is the modified Doolittle system. We were very successful in rearing queens by the method, as outlined therein, also by the grafting process. Geo. W. Bercaw.
Glendale, Calif., Dec. 17, 1912.

Good Prospect in Wisconsin

Bees went into winter quarters in excellent condition. I predict very successful wintering. White clover made a strong growth last fall, and is now covered with a light snow. I look for a bumper crop of honey next year. C. Sheldon.
Elroy, Wis., Dec. 28, 1913.

Louisiana Experiences

My bees have done fairly well this year, although we have had scarcely any rain since Aug. 10, consequently I did not have any fall flow except what the bees got from cotton. It gave from 5 to 10 pounds in the super. Swarming, which was 300 percent this year, has cut the surplus low, although my colonies averaged $5.25 each in honey alone, and I have not taken any honey out of the brood-chambers except the amount that was at the top of a frame of brood which I always give to the swarms. This is the surest way to hold a swarm.

My bees have had a cleansing flight every week, and some colonies have plenty of brood yet, but these colonies are the ones that have plenty of stores and bees.

I cut out and transferred to a pane of glass, 10x14 inches, Dr. Miller's method of rearing queens; also the picture of the frame of cells, and it is one of the pictures that adorn my home.

The American Bee Journal gets better and better all the time.
W. R. Cunningham.
Rayville, La., Dec. 11, 1912.

Bees Going into Winter Quarters Short of Stores

It was not a very good year for honey here on account of the cold and wet spring, and the hot and dry summer. I only secured 1700 pounds from 45 colonies, spring count, and increased to 60.

My bees went into winter quarters in light condition: they did not seem to get any fall feed, as it was cut off by early frost. This is the first time it has ever happened to me. It caught me unawares, and I fear the loss will be heavy. The bees had enough the last of August, but it seems they ate up their honey instead of bringing any home after that date. E. M. Lawrence.
Mayfield, N. Y., Dec. 16, 1012.

[Put a cake of sugar candy over the cluster of each hive which is short of stores.—Ed.

A Sweet Extractor

Did you ever realize how sweet a honey-man can be at times? I never did until some one put into my dress-suit case, the other day, a leaky can from which all the honey had not been taken out, and omitted to put any wrappings around the can. I found the contents and myself completely covered with honey before I got through with the mess. So that is why I especially admit that I am a sweet extractor.
Edward F. Bigelow.
Sound Beach, Conn.

A Good Season in Ontario, and Getting Ready for Another

I have been fairly successful with my bees this year. I secured about 900 pounds from 14 colonies, spring count, and increased to 20 by natural swarming. In the fall of 1911 I went into winter quarters with 20 colonies and came out with 13. I bought one in the spring to make up the 14.

I have 29 colonies, all packed snugly with a superful of chaff on top; the sides and roof are covered with tar paper. We had a splendid honey-flow from clover this year but the buckwheat was an entire failure. I got 300 pounds of fall honey from wild plants. I have sent in my order today for my bee-supplies, and I am looking forward for a big crop next year. R. R. Victor Tippett.
Quays, Ont.

The Odor of European Foul Brood

Concerning a letter of Morley Pettit's December number, page 350), referring to an article of Dr. Miller's, page 324, the difference in odors may be explained on the basis of mixed infection. The bacillus causes the death of the larva, which, being under most favorable conditions of heat and moisture, at once becomes the prey of the ever-present germs of putrefaction.

It is quite possible that the bacterial flora of one "locality" may be much more productive of malodorous gases than those of distant "localities." Even in the same neighborhood, and under seemingly identical conditions, the predominance of one "breed of ducks," or the blending of various strains, may produce great variations in odor.

This appears the most rational explanation of the difference noted by two observers, neither of whose accuracy can be questioned. F. A. Stockdale.
Coal City, Ill., Dec, 7, 1912.

Kerosene to Prevent Robbing

I see considerable discussion lately in the bee-journals concerning robbing. The beginner often has to confront this problem. It is an old and true maxim, that "An ounce of prevention is worth a pound of cure." Many cases of robbing are started by carelessly spilling honey about the yard. When such accidents happen I pour a little kerosene over the honey and the bees continue to pursue the even tenor of their cares without knowing there is any loose honey about so completely does the kerosene absorb the aroma. Addison Gould.
Weston, W. Va.

A Wisconsin Report

I took 30 colonies out of the cellar last March with no winter loss. Last summer I had 16 swarms, got 1200 pounds of very fine comb honey, which I sold for 15 cents a pound. John Cline.
Darlington, Wis., Dec. 22, 1912.

What Influence Bee-Papers Have

Enclosed find check for the American Bee Journal for one year. I don't want to miss a single number. Often I find one item worth

a year's subscription, and in my inspection work it is easy to tell without asking if one takes a bee-paper. I find very few make a success of bee-keeping who do not take one. My bees are flying today with the thermometer at 60 degrees. JOHN L. BYARD.
Marlboro, Mass., Dec. 16, 1912.

California Co-operation

The California Bee-Keepers' Association will market its members' product in the future, and we intend to create such a demand on the home market that you of the eastern portion will never come in competition with us. It is our belief that California can consume all the table honey that we can ever produce.

No rain yet, and the bees are wintering very poorly. GEO. L. EMERSON.
Los Angeles, Jan. 3, 1913.

A Good Report from Minnesota

Enclosed you will find a picture of my apiary of 52 colonies of Italian bees. Like most of the bee-keepers here, I lost heavily last winter. Out of 46 colonies I managed to save 26. These 26 were increased to 58 by dividing. I then sold 6 at a good price. The 52 colonies gave me a surplus of a little over 200 pounds of mostly white clover honey—not so bad when one considers the awful condition they were in when taken out of the cellar, and the cold and backward spring we had. You will notice the apiary is situated in an orchard; all colonies facing the south. I use the 10-frame hives, and run for extracted honey mostly. I also use the queen-excluders, as I simply cannot get along without them. My hives are all numbered, and a record is kept of all queens and colonies.

As I had a little trouble in keeping the grass down in front of the hives, I tried an experiment. I put, as you will see in the picture, six inches of sawdust about two feet wide in front of the hives, but it was a failure, as in about four weeks the grass came shooting up through the sawdust. The grape trellis you see in the picture, has every year given a good crop of grapes, but in all these years I have never once found that the bees punctured the grapes, as some foolish writers claim they do.
GOTTLIEB A. BARBISCH.
La Crescent, Minn.

Corn Meal and Honey

Corn-meal pudding and honey make a licking good combination for old folks. Try some. EDWIN BEVINS.
Leon, Iowa, Dec. 10, 1912.

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Wants, Exchanges, Etc.

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F. B. Stone, Itaska, N. Y., May 8, 1912.

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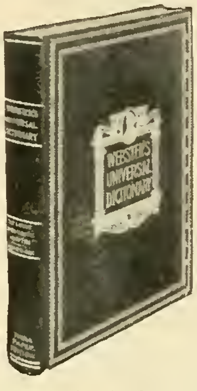

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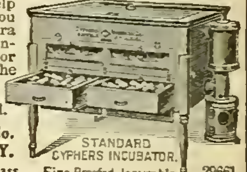

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A Year's Work in the Out-Apiary, by G. M. Doolittle.—The author is an experienced bee-keeper, who tells in this little book the requirements necessary for keeping bees away from home. For any one who is intending to keep bees on a large scale, this book will be invaluable, paper bound, contains, contains 60 pages. Price, 50 cents: or with the American Bee Journal one year, $1.25.

How to Keep Bees, by Anna B. Comstock —This is a practical work on bees, written with the special intent of instructing amateurs in bee-keeping. The authoress is well versed in her subject, and has written a book which is very good for the amateur or suburbanite who wishes to keep bees in a small way. The book contains 228 pages. Cloth bound, postpaid, $1.00; or with the American Bee Journal one year, $1.75.

Quinby's New Bee-Keeping, by L. C. Root. —This is a modern edition of "Quinby's Mysteries." Mr. Quinby is well known to all bee-keepers. He, with Mr. Langstroth, was responsible for much of the early growth in bee-keeping in America. Cloth bound, 220 pages. Price, postpaid, $1.00; or with the American Bee Journal for one year, $1.75.

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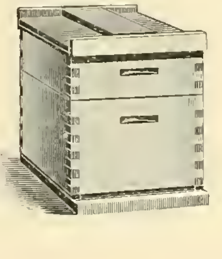

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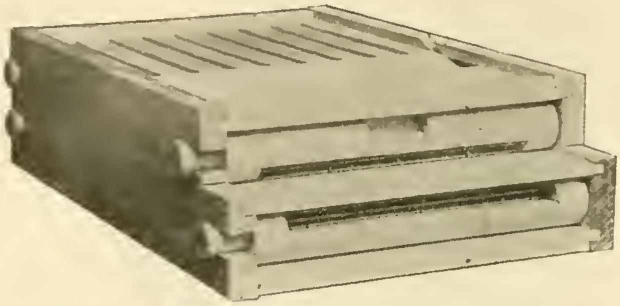

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"Two colonies of bees invoiced by you on Jan. 29 to Matsutaro Sarada, Kobe, arrived safely on March 23, and are satisfactory.
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Each Colony contained a fine Breeding Queen.

My Bee and Queen Exhibits at the State Fair of Texas were awarded six premiums in 1911.
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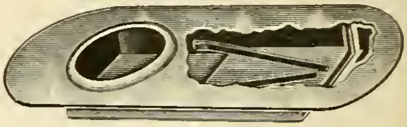

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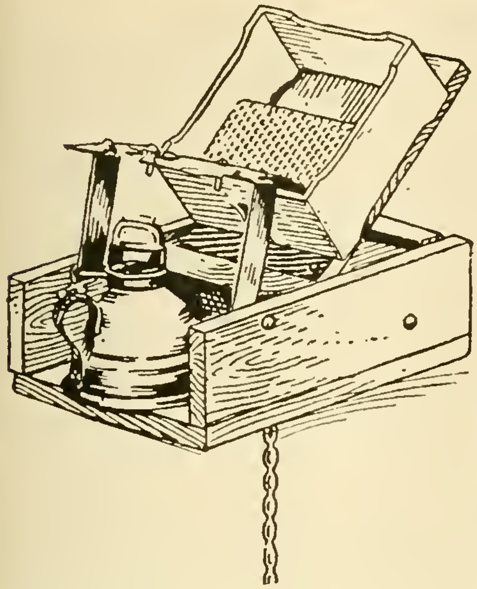

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And now I want to thank you for what you said, and I assure you that as soon as possible I will return the favor, not only to you, but your many interesting readers who have written so many good and cheering letters to me. I declare I don t know just how to express myself over the matter, but I must feel something like a great "big hearted" fellow feels at a good old-fashioned hand-shaking at the close of a good meeting, when the good spirit is at its ebb.

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HONEY AND BEESWAX

CINCINNATI, Jan. 20.—The demand for honey at the present time is rather quiet, and we do not look for a change until about the middle of next month. However, we quote fancy double-decker comb honey at $3.75 to $4.00 a case; fancy extracted honey in 60-pound cans at 9@10c a pound; and amber extracted honey in barrels at from 5½@8c per pound, according to the quality and quantity purchased. The above are our selling prices, not what we are paying. For strictly choice bright yellow beeswax we are paying from 28 to 30 cents a pound, delivered here. THE FRED W. MUTH CO.

NEW YORK, Jan. 20.—Comb honey is fairly well cleaned up, some little lots are still arriving, but not of any large size. The demand is fair at unchanged prices. The market on extracted honey is decidedly dull. The high prices this season for fancy stocks, such as white clover and California sage have lessened the demand to quite some extent, and some companies have quit packing all together. While the supplies are not large of the above named, they are sufficient to meet the demand at prices ruling same as were furnished last. West India honey is weakened considerably, and is selling now at around 73@76c per gallon, according to quality. Beeswax is quiet at 30@31c.
HILDRETH & SEGELKEN.

SAN FRANCISCO, Jan. 20.—The demand for comb honey has not been so marked, although plenty has been offered, and the prices are as follows: Fancy No. 1, 15@16c; No. 2, 13½@14½c; dark comb, 11@12c; water-white extracted, 8@8½c; light amber, 7½@8c per lb; amber, 6@7½c; lower grades, 5@6c Beeswax, 27@30c for nice yellow wax, and 23@26c for dark. JOHN C. FROHLIGER.

INDIANAPOLIS, Jan. 20.—White comb sells at 18c in 10-case lots; No. 1 white, one cent less. Amber comb in slow demand, and at lower figures. Best extracted sells at 11@12c in 5-gallon cans. Comb honey seems to be in excessive demand, and very little is now being offered by producers. Beeswax is in good demand, and producers are being paid 30c per pound. WALTER S. POUDER.

BOSTON, Jan. 21.—Fancy white comb honey, 16@17 per lb.; No. 1, 15@16c. Fancy white extracted, 10@11c; light amber, 9@10c; amber, 8@9c. Beeswax, 30c. BLAKE,-LEE CO.

CHICAGO, Jan. 20.—This past week has shown renewed activity in the honey market, and while the supply is ample the prices are fairly well maintained. The best grades of white comb honey bring 16@17c per pound, with a shading of 1@3c per pound on the lower grades, according to quality and color. Extracted clover and basswood ranges from 9@10c per pound, with other grades and kinds at about 8c per pound. Beeswax steady at from 30@32c per pound, according to color and cleanliness.
R. A. BURNETT & CO.

KANSAS CITY, MO., Jan. 20.—The demand for both comb and extracted honey is still light, with light receipts. Supply good. We quote as follows: No. 1 white comb, 24 section cases, $3.10 to $3.25; No. 2, $2.75 to $3.00. No. 1 amber, 3.00; No. 2, 2.75. Extracted, white, per pound, 8@8½c; amber, 7@8c. Beeswax, per pound, 25@28c.
C. C. CLEMONS PRODUCE CO.

LOS ANGELES, Jan. 15.—Since our last report was submitted there has been a little more inquiry for honey, but the demand has been so light for some time that holders have been willing to sell at current prices. It is very evident, however, that there is not stock enough on hand to supply the demand until the new crop comes in, and we look for a strong market from now on.

We judge that the California output of extracted honey has been about 150 carloads of 15 tons each, and of comb about 7 carloads. These figures are less than half of those for a normal crop. We quote the present market as follows: Light amber sage, 6¼@6⅜c; light amber alfalfa, 6⅛@6¼c; white to water-white alfalfa about 7c. All f. o. b. Coast, $1.00 freight rate by rail. Light amber sage, 6⅜@6½c; f. o. b. steamer, San Diego, with 60c freight rate. HAMILTON & MENDERSON.

DENVER, Jan. 18.—We quote comb honey in a jobbing way at the following figures: No. 1, $3.05; choice, $2.90; No. 2, $2.70 Extracted honey, white, 9c; light amber, 8c; strained, 6¾@7c. We pay 26c in cash and 28c in trade for clean yellow beeswax delivered here.
THE COLO. HONEY-PRODUCERS ASS'N.
F. Rauchfuss, *Mgr.*

CINCINNATI, Jan. 17.—The demand for comb and extracted honey is light, with a good supply. No. 1 white comb honey sells in large lots at $3.60 per case of 24 sections. There is no demand for off grades. White extracted honey in 60-pound cans is selling from 9½@10c; light amber in barrels 7@7½c; in 60-pound cans, 8@8½c. Beeswax in fair demand sells at $33 per hundred.

The above are our selling prices, not what we are paying. C. H. W. WEBER & CO.

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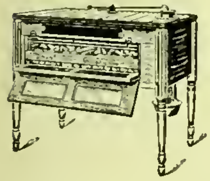

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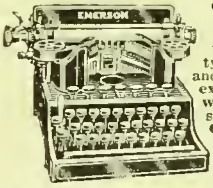

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THE season just past has demonstrated more clearly than ever the necessity for being prepared for a honey-flow BEFORE it comes. If you wait until the season is upon you, the chances are that the greater part of the crop will be lost while you are impatiently waiting for supplies to arrive. It may seem a little early now to think of next season's honey harvest; but the fact of the matter is, this is just the time to order goods for next season.

We are beginning now to replenish our stocks. We shall have carload orders coming from the factory very often for the next few weeks. Special orders placed now can have just the attention they need, both here and at the factory, and you may have your goods sent in one of our cars, thereby saving on transportation charges. Regular stock will come straight to you from our warehouse in unbroken packages, and you can put the goods together in your odd minutes, thereby saving the expense of extra help in the spring.

Our usual discounts for early orders apply again this season— three percent for cash orders sent in January, the discount diminishing one per cent per month as the season advances. These discounts mean a considerable saving, and you might as well take advantage of the highest by ordering now. No change of prices as yet has been announced, and you may, therefore order from your present catalog. If your catalog has been mislaid, write us at once and we will send another.

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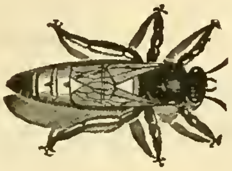

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Riddle, Oreg., July 4, 1912. L. W. WELLS.

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Gentlemen:—The queen you sent me came in good condition. She was one of the best I have ever bought. I have her introduced and she is doing business as if to the manor born. I want another of those beautiful queens as soon as I can possibly get it for making up my fair exhibit. Please send a fine one. Such queens certainly advertise your business.
Darlington, Wis., July 31, 1912. C. R. BRIDGMAN.

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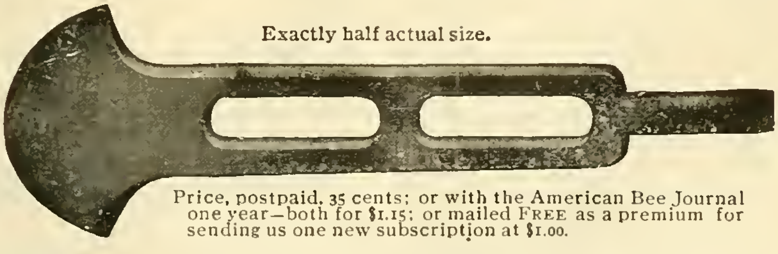

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American Bee Journal, Hamilton, Illinois.

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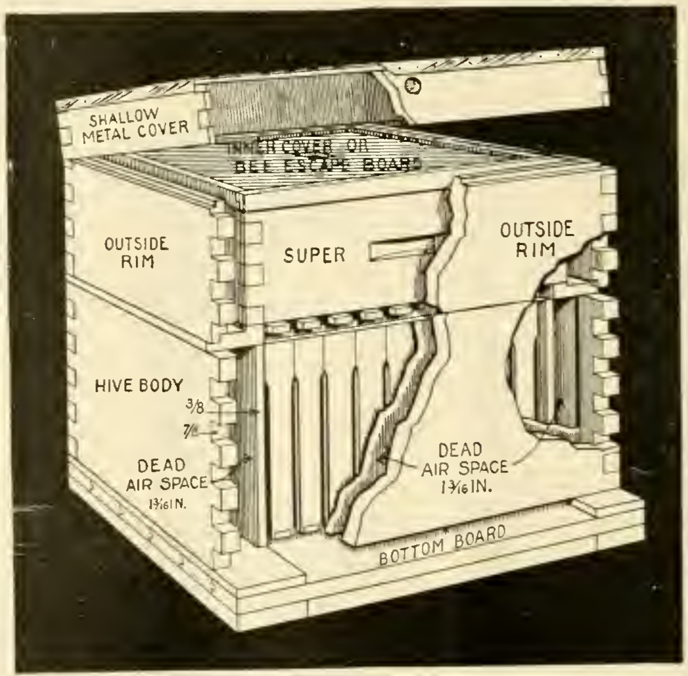
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AMERICAN
BEE JOURNAL

(Entered as second-class matter at the Post-Office at Hamilton, Ill., under Act of March 3, 1879.)

Published Monthly at $1.00 a Year, by American Bee Journal, First National Bank Building

C. P. DADANT, Editor.
DR. C. C. MILLER, Associate Editor.

HAMILTON, ILL., MARCH, 1913

Vol. LIII.—No. 3

EDITORIAL COMMENTS

Cross Yellow Bees

The Editor of Gleanings in Bee Culture, in Jan. 15 number, comments upon the statement that very yellow bees are often cross. Italian bees, when pure, are especially gentle. All imported Italian bees are. The breeding for color ought not to destroy that quality. Is it not possible that those cross strains come from a mixture of the Cyprian bees, which were bred so plentifully years ago on account of their bright copper-colored bands and shield? We gave them a full trial ourselves, and have since carefully eliminated them. But why breed for color in any case? It is true, yellow bees sell best. But prolificness and activity ought to be the qualities selected above all others.

Do Bees Dislike Black?

Mr. John H. Lovell writes very interestingly in Gleanings in Bee Culture on this subject, and gives good evidence that bees do not dislike black, but that it is more readily noticed by them than other colors. Hence, they will sting a black hat more readily than a light-colored one. They will certainly sting a dark woolen hat or felt hat more than a straw hat. The latter is made of vegetable fiber, to which they are accustomed, and which they mistrust less than the wool, hair or felt of animals.

Black shows rarely in the fields above the soil. When looking for an enemy, they would be sure to mistrust anything of that color.

On the other hand, the trunk of a tree, a cluster of their own sisters are of a dark color. Attention has been called, in the "Langstroth-Revised Hive and Honey-Bee," paragraph 417, to the fact that a swarm may often be induced to settle on a dark mullen stalk or a piece of black cloth, tied to a pole in full view of the apiary. We have personal knowledge of the value of this suggestion.

Where is the farmer boy who does not know that the bumble-bees of a destroyed nest will rush into the dark mouth of an empty jug if it is placed at the spot occupied by their nest immediately after destroying it? Has the black hole a fascination for them, or do they expect to find the enemy within?

Foul Brood in Iowa

A letter received from Mr. Frank C. Pellett encloses his report to the Governor of Iowa as inspector for 1912. It shows the disease in 34 counties. Mr. Pellett states that the bill, which carried an appropriation for inspection for 1913, was killed in committee, but that a slightly different bill will at once be introduced. It is said that lack of interest on the part of the bee-keepers is the cause of failure of the first bill. Each bee-keeper should take an interest in the matter and write to his representative and senator about it.

One of the most sanguine bee-keepers of the State, Mr. A. B. Tackaberry, of Cantril, writes:

"The Bee Journal should urge the bee-keepers to write to representatives, demanding their support. Iowa is a sister State, and you should be interested in its success."

The American Bee Journal has offered to help in every way, but the Iowa bee-keepers must lead the fight. Join hands, friends, and you may yet win this season. Write to your men that they must support the bee-disease bill.

Death of Grandmother Wilson

We realize now a little more than we ever did before what is meant by "The Vacant Chair." For more than 14 years our home has been brightened by the presence of Grandmother Wilson. January 24, after being up through the day, she went to bed at her usual bedtime, and at 10 o'clock she very suddenly breathed her last without a pang or struggle. She lacked 22 days of having rounded out 94 years. Her beautiful life was an inspiration to us all, and fragrant memories are left.

MRS. MARGARET WILSON.

C. C. M.

We know that the above lines will

appeal to the sympathy of every one of the subscribers, hence we publish them just as received from Dr. Miller in a private letter.

Mrs. Wilson gave the example of a quiet ending because of a frugal, peaceful life. A good example for us all.

Margaret Pringle was born in Perwickshire, Scotland, Feb. 15, 1819. With her father's family she came to America in girlhood, and to Kentucky in June, 1838. In the fall of 1841, the family moved to Jo Daviess Co., Ill., where, July 29, 1842, she was married to John Wilson, who preceded her to the better land by nearly 24 years. In 1844, she settled with her husband on the Wilson farm north of Marengo, where she lived until 1898. The last 14 years of her life were spent at the home of her eldest daughter, Mrs. C. C. Miller.

Mrs. Wilson was the mother of eight children, five of whom are now living. Mrs. Sidney J. Miller, Mary E. Wilson, Emma M. Wilson, and John F. Wilson, of Marengo; and Mrs. Annie Stull, of Los Angeles, Calif. She also reared one step-daughter, Eliza Wilson, who became the wife of Rev. J. N. Hutchinson. Her living grandchildren number twelve, with one great grandchild.

Effects of Feeding Sugar

When a year of failure comes and the bee-keeper finds the brood-chambers of his colonies empty of stores in the fall, with no honey on hand to feed them, it is no small convenience, to put it mildly, that he may resort to sugar as a safe substitute for winter stores In some localities the bees have filled their brood-chamber with a sort of honey-dew that is practically poison for winter stores, and then what a blessing it is that the unwholesome stores may be extracted and sugar syrup supplied in their place! The American bee-keeper may congratulate himself upon the low price at which he can obtain the best granulated sugar. Pages upon pages in European bee journals are occupied with discussions as to getting sugar duty free for the purpose of feeding bees, either having a law allowing each bee-keeper to receive free of duty so many pounds of sugar for each colony, or else having denatured sugar at a low price. The American bee-keeper has no worry over anything of this kind so long as he can get all the sugar he wants at not far from 5 cents a pound.

But the indiscriminate feeding of sugar is not without its dangers. The man who feeds sugar at a time when it will be stored in the surplus compartment is doing a dishonest thing, that is especially reprehensible because of the general discredit it brings upon all honey. Nor is the feeding at other times always without danger. It has been found that when the brood-chamber has been unusually well stored with dark honey in the fall, and a good portion of it left over at the time of the opening of the white honey harvest, some of the dark honey would be found in the supers, having been carried there to make room for the queen in the lower story. Of course, there would be the same danger that sugar syrup would be carried up under the same circumstances.

Replacing Honey with Sugar.—But sugar is not always fed as a matter of necessity. When honey can be sold at 10 cents a pound and sugar can be bought for half that price, it seems an attractive proposition to empty the honey out of the brood-chamber and replace it with sugar syrup. Suppose we figure a little. Here is a colony in the fall with its store of honey all ready for winter. Let us extract from it 30 pounds of honey and feed back in its place 30 pounds of sugar syrup, 5 pounds of sugar to 2 pounds of water. In 30 pounds of such syrup there will be 21.4 pounds of sugar. We will now have:

30 lbs. of honey at 10c........	$3.00
21.4 lbs. of sugar at 5c........	1.07
Profit.....................	$1.93

If we have an apiary of 100 colonies, that would give us $193 pay for the extracting and feeding, which might all be done in a week. Even if it would take 2 weeks, or 12 days, we would have $16 a day for our trouble. Looks good, doesn't it?

But there are things that will cause some shading down of these figures. Time and again it has been shown that when 30 pounds of syrup are fed it means an addition of considerably less than 30 pounds to the stores of the colony. Just why or how this loss occurs does not now concern us; the fact of such loss does concern us, and that fact is well established. Lately, in a German bee journal, a bee-keeper of 30 years' experience reported that during that time he had had 100 colonies or more nearly all the time, and had fed thousands of pounds of sugar for wintering. The bees wintered well, but he had not failed to notice that a colony heavy with such stores the first of October would be very greatly reduced in weight two months later, while colonies which had not been thus fed, but had gathered their own stores of honey, showed no appreciable diminution of weight at the same time.

An item in the loss is the probable transformation of some of the syrup into wax. Whenever we feed bees plentifully and rapidly, they show a tendency to produce wax, and often whiten their combs with new wax, even though there is but little need of it. There are those who claim that wax costs only two pounds of syrup or honey for each pound of wax, but there are also records of this sort of feeding requiring some 20 pounds of honey for each pound of wax. Putting it between the two, for an average, the wax produced under such circumstances is certainly not a profitable investment.

Effect on the Bees.—There is another phase of the subject vastly more important, that may have resulted in heavy loss which the average bee-keeper has attributed to anything else rather than the feeding of sugar. When sugar is fed, the cane sugar must be changed to inverted sugar, and that change costs something to the bee, and a loss to the bee is a loss to the bee-keeper. Another item, however, greatly overshadows this. In a late number of Schweizerische Bienenzeitung, Dr. U. Kramer has especially emphasized it. Analysis showed that in the winter stores of sugar syrup, albumen was contained to the amount of 28 hundredths of one percent in the unsealed cells and 36 hundredths of one percent in the sealed cells, or much the same as in pure honey. Now, where did this albumen come from? Not from the sugar, but *from the body of the bee itself*. This, of course, causes wear and tear to the bee, and unless this nitrogenous material is promptly supplied to the bee, the wear and tear becomes very serious indeed. Dr. Kramer considers it clearly shown that the bees will be weakened thus by the feeding of sugar if large quantities be fed too rapidly, or if the feeding be done during continuously bad weather when the bees cannot secure pollen, or so late in the season that pollen is no longer to be had. He points out that this explains why it is that bees are so eager for pollen when sugar is fed, and why it is that a fine store of pollen will disappear without any starting of brood-rearing, and also why in spring a colony becomes rapidly decimated with continuous feeding of sugar with no pollen available to replace the nitrogenous material.

Taking all these things into account it will be seen that the bee-keeper who figured on a profit of $1.93 may in some cases sustain a loss to that amount through the replacing of honey with syrup of sugar, as a result of the reduced forces that will be ready to enter upon the expected harvest.

There are some, and they are wise,

who consider it best to feed sugar only as a last resort to prevent starvation, and who plan ahead to have on hand sealed frames of honey to meet any emergency, so that the last resort rarely or never happens.

Ventilation of the Hive

We call the reader's attention to the contribution on the above subject, in this number, by Mr. Hopkins, of New Zealand, in answer to Mr. D. M. Macdonald, of Scotland.

A courteous discussion between two men as capable as these cannot fail to be interesting and to bring out some valuable points. Though not wishing to take sides, we ought to state a few facts connected with this matter.

The contestants do not refer to the same conditions in their experiments, Mr. Hopkins lives in a warm country, 37 degrees south of the equator, and made his experiments during the summer. The other, Mr. Macdonald, lives in the north of Scotland, on the coast close to the North Sea, and near the 58th degree of latitude north, which is at the same degree as Sitka, Alaska or the southern part of Hudson Bay. Although the British Isles have a much more temperate winter than the same latitude on the American continent, yet it is clear that wintering bees must be a problem there, very much as it is in the northern United States or Canada, while wintering bees in Auckland, N. Z., is probably less difficult than in Richmond, Cairo, or Wichita.

So much for differences in conditions and observations. We also wish to recall an experience of ours, already stated in these columns some years ago, but which will bear repeating.

The winter of 1884-5 was one of the longest and hardest that we have ever known. At that time we had no faith in moisture absorbents. But we tried to make our bees as warm as possible by sheltering them on all sides but the front, which remained open. The upper story was filled with dry forest leaves, but the ceiling of the brood-chamber remained, as in summer, an oilcloth thoroughly gummed with propolis and water-proof. However, some of these gummed cloths had been damaged by the bees and were perforated. This circumstance resulted in giving us an unexpected lesson.

The bees were confined to the hive for months, the temperature in January going as low as —20 degrees Fahr. (—29 C.) week after week, when the finest sunshine could not raise the degree above 10 (—12 C.)

On opening the hives, in the first days of warm weather, we found many of the colonies with sealed covers in a pitiable condition, the evaporating moisture having condensed over and around them. Many of them were literally soaked with the thawing ice-water. But the colonies which had openings in the oilcloth were without exception dry in the brood-chamber, the moisture having escaped into the leaves above, which were in many cases soaked with it. This experience was made unexpectedly for us, with some 400 or 500 colonies in five different apiaries, and resulted in our accepting Mr. Langstroth's views which are recorded on pages 351 and 352 of the last edition of our book. We will quote only a few words of the conclusions to which he arrived after the winter of 1855-56:

"*In the coldest parts of our country, if upward absorbents are neglected, no amount of protection that can be given to hives, in the open air, will prevent them from becoming damp and moldy, even if the frost is excluded, unless a large amount of lower ventilation is given.*"

In verification of the last part of this proposition, we have seen populous colonies wintered safely, but with great consumption of honey and loss of bees, in hives which were entirely open at the bottom, with no bottom-board whatever.

In our climate, in a hard winter, if the entrance of the hive is too small, it often becomes clogged with dead bees to such an extent as to practically stop all ventilation.

The Ohio State Convention

As stated in a previous number, the Editor attended the Ohio State Bee-Keepers' convention Jan. 14 and 15, at Columbus. Mild weather greeted us all the way. The contrast of the winter weather this year with that of the previous winter is remarkable. An old friend, now deceased, used to tell us that "intensities balance each other in the world," meaning that anything running to one extreme is sooner or later followed by the opposite extreme.

The attendance was fair, some 40 or 45 bee-keepers being present. The same staff of officers was elected, and we must say that it would be difficult to find anywhere a better chairman or a better secretary than the present incumbents. Mr. Chas. H. W. Weber was elected delegate to the National to represent the State of Ohio.

In the report of the chief inspector, Mr. Shaw, it was shown that there are at least 53 to 54 counties in Ohio infected with American foul brood to a greater or less extent. The suggestion was advanced that the rest of the counties may show foul brood also when closely inspected. As the first work has been done in 1912, it is difficult to report much progress. But the statements made will awaken the attention of the practical bee-keepers and induce them to be vigilant.

The cost of inspection has been between 20 and 24 cents per colony. It is proposed to ask for a $3000 appropriation for this work instead of $2000.

The spraying of fruit trees while in bloom was much discussed. There, as in many other States, the large orchardist excuses himself for spraying during bloom, under the plea that he has to begin early if he wishes to spray his entire orchard in time. They do not claim that spraying during bloom is harmless, but that it is more harmful to the fruit to delay until after the entire fall of the petals. The convention passed a resolution to appoint a committee to take up this matter and introduce a bill in the Legislature to forbid spraying during the bloom of the trees.

A very interesting address was given by Mr. E. R. Root on different subjects pertaining to apiary management. Among other statements, he said that honey which is pumped from one vessel to another, after the crop, granulates more readily than that which is exposed but little to the air. This reminded us that the granulation of the famous Narbonne honey, which is of great whiteness, is hastened by stirring and beating. Not only does it granulate faster and more thoroughly, but its granulation is soft and the color of increased whiteness. In this country, where granulation is rather considered a defect, this method would probably not become popular. But there is no doubt that thoroughly granulated honey, of fine grain, is of good quality.

Mr. Tyrrell, Secretary of the National, was present and urged the bee-keepers to unite with the National. Mr. Tyrrell has very winning ways and good arguments. We trust he may succeed in organizing the National on a rational plan.

Bee-keeping, we are told, is getting more and more into the hands of specialists. The present conditions of disease certainly lead in that direction. The careless apiarist will have to become careful or quit. Shiftless bee-culture will no longer do.

A New Bee Journal

The California State Bee-Keepers' Association have decided to publish a bee journal. It will be called the Western Honey Bee, a monthly, and is to be devoted to the interests of the bee-keepers of the West. Many successful bee-keepers live in that part of the country, so that plenty of support for the new bee journal will undoubtedly be found.

The editor-in-chief will probably be Mr. P. C. Chadwick, of Redlands, Calif., assisted by such able western men as J. D. Bixby, L. L. Andrews and Geo. L. Emerson.

We take pleasure in extending our heartiest wishes for success to the new bee journal.

Flower Pollination

Gleanings in Bee Culture contains an interesting article on this subject by John H. Lovell, page 771, Dec. 1, 1912, being a friendly reply to another interesting article by P. F. X. Ryan in Gleanings for Oct. 15. Mr. Ryan objects to the claim that bees are attracted to the flowers by their bright colors, saying that the theory is confronted by many ugly facts. In this direct connection he says: "Lubbock makes an assertion similar to Sprengel's, that the very arrangement of the colors, the circular bands and radiating lines, are all with reference to the visits of insects. Why, then, I ask, is the apple blossom painted on the *back* and not on the front? Here, surely, is an instance of the complete unsatisfactoriness of their contention."

The observant bee-keeper who is not a botanist, would be likely to reply to this, "It may be that the bee does not see that outside red with its nose directly in the flower, but to me that red color is very plainly to be seen when I look at the tree either from a distance or close by. Why may it not be thus seen by the bee?" But Mr. Lovell dees not choose to make such a reply. Instead of that he takes an entirely different tack, and brings out a very interesting point as to color in flowers. He says:

> In New England the whole outside of the young blossom of the wood anemone (*Anemone quinquefolia*), which blooms the last of April, when winds are chill and snow still lingers in the ravines, is often colored purplish red. Red coloring may be observed on many other flower-buds, leaf-buds, and on young leaves in early spring. Because a pigment is useful in some instances in rendering flowers conspicuous, it does not follow that in other cases its *role* may not be entirely different. It is believed that red coloration is often beneficial to plants in raising their temperature by converting light rays into heat.
>
> That red coloration does actually raise the temperature can be shown by the following experiment: Place some red leaves, the superficial area of which has been measured, in a small flask of water. In another flask containing an equal quantity of water put a few green leaves with the same extent of surface as the red leaves. Place a thermometer in each flask; close them and set them in the sunlight. After a time the water in the flask containing the red leaves will be found to be 4 degrees C. above the temperature of the water containing the green leaves. The water in the second flask will also be a little warmer than at first, as the green leaves produce some heat. On a cold day in springtime, when the air is near the freezing point, an increase of only 4 degrees C. might be a great benefit to a plant. In the same way red styles may aid the growth of the pollen-tubes.

Mr. Ryan objects to the theory that highly-colored flowers are designed for insects by saying: "Where is there a more highly-colored flower than the poppy? and yet it contributes not one iota of nectar to its insect visitors." To this Mr. Lovell replies that the poppy, like the rose, is a pollen flower, and that bright colors and odors are as valuable to pollen flowers as to nectar flowers.

Mr. Lovell refers the question to the bees themselves. He says: "Let us put the question to Nature. The way to question Nature is by experiment. I repeatedly counted the number of visits made by the honey-bees to clusters of pear blossoms during a given interval of time. In one instance 8 visits were observed in 15 minutes. I now removed all the petals and watched the denuded blossoms for the same length of time. There were either no visits in some cases, or in others only one or two.

Again, during a certain time the number of visits made by honey-bees and bumble-bees to the flowers of the garden squash were counted. The big cup-shaped corollas were then cut off close to the green calyx. The result was the same as with the pear blossoms—the naked flowers received few or no visits.

Like results were shown by experimenting with borage.

The fact that the bees visited the entire blossoms but paid no attention to the denuded ones notwithstanding their nectar was left undisturbed, is conclusive evidence, Mr. Lovell thinks. "that bright-colored petals are an advantage in attracting the visits of bees.'

MISCELLANEOUS NEWS ITEMS

State Inspection in Texas.—We are in receipt, through a friend, of the report of the Texas State Inspector of bees, Wilmon Newell, for the year ending Aug. 31, 1912. It being too lengthy for these columns, we will give but the most important points.

The appropriation of $2500 was expended in the inspection of 31,819 colonies in 10 counties. 283 colonies were found affected with American foul brood. Of these, 230 were treated and the others destroyed. A very gratifying condition is shown of the decrease of the disease in some of the counties inspected since 1911. Uvalde county, in 1911, showed 58 diseased colonies; in 1912, only 3.

The above statements show conclusively that prompt and active measures will eradicate disease where inspection is conducted in a thorough manner. Mr. Newell and his assistants are to be congratulated.

There is no European foul brood, or at least none reported in Texas. This simplifies the work very much. Although Mr. Newell is evidently very thorough, it is probably owing to the absence of this variety, and to the small number of colonies diseased, that the cost of inspection is less per colony than in other States. Texas is doing the job at the right time.

Bees Need Special Attention.—Instead of making the care of bees a part of the general farm work to be shared in by any one or all members of the family, as the passing moment dictates, let some one member—the one who takes the most interest in bees—be made responsible for the profit or the loss from the apiary. This is nothing more or less than beginning organization. With organization, neglect and loss will disappear, and with all the modern improvements above enumerated, at the command of the present day bee-keeper, profit must appear.—*Exchange.*

Kansas Bee-Keepers.—The 10th annual meeting of the Kansas State Bee-Keepers' Association was held in Topeka Feb. 4 and 5.

Talks were given by Prof. George Dean and Prof. S. J. Hunter, both of which were highly appreciated by those present. Dr. G. Bohrer, of Lyons, O. S. Mullin, of Holton, and

Mr. T. Yawata in His Well-Kept Apiary Near Osaka, Japan
One of the pioneer bee-keepers of his country, who, with 20 years' experience, is teaching the mysteries of bee-keeping.

Arthur Small, of Topeka, read a number of articles of interest to bee-keepers.

The following officers were re-elected: President, P. R. Hobble, of Dodge City; Vice-President, Mrs. J. D. Smith, of Troy; Secretary-Treasurer, O. A. Keene, of Topeka.

The next meeting will be held about Feb. 15, 1914.

Worcester County Association of Massachusetts.—A series of meetings is scheduled for the members of this association, one for each spring month—March 8, April 12, May 10 and June 14. A summer field meeting is also planned to be followed by monthly meetings in the fall. A series of meetings of this kind will be of great value, particularly to beginners.

Honey Costly by Mail.—In a recent number of the Spokesman Review, of Spokane, Wash., appears a letter by A. E. Burdick, of Sunnyside, Wash., with the above heading, and we quote:

> My first request for honey by parcel post came from A. B. Walker, of Ford, Idaho. Ford is just outside the limits of the second zone, or a little more than 150 miles, and would therefore take the third zone rate, which for 11 pounds is 57 cents. Mr. Ford's request was for 10 pounds. The container would call for an additional pound, which would have to be paid for. The producer would be satisfied to get $1.00 for the 10 pounds of honey, including the container, and in this transaction our dear "Uncle Samuel" is getting by far too much of the consumer's money. I would suggest that the parcel post tariff schedules need revision downward in the interest of both consumer and producer.

Eastern Illinois Meeting.—The meeting at St. Anne, although not very numerously attended, was characterized by active discussions. The wintering problem was taken up by men who have had long experience. The majority give the preference, in outdoor wintering, to apiaries sheltered from high winds, with packing of absorbents in the supers and ample ventilation below. Most of those who spoke use burlap or gunny over the top of the frames, with forest leaves, chaff or warm cushions at the top. The President, Mr. Willis, reported having the best success with his colonies in a shed facing south, the front of which is closed in very cold weather by a hinged front, which is let down in warm days and serves as an alighting board.

In a discussion of foul brood, the universal topic, some one made the suggestion that the carrion or "high meat" odor mentioned in the Bee Journal by Mr. Sladen, might be due to the dying of brood after a comb containing some foul brood has been removed from the hive. Healthy brood, chilled to death, has exactly the smell of carrion, when rotting in a warm temperature. No one present thought that a few cells of European foul brood would give a very pronounced odor.

The large and small hive discussion, which promised so much interest, was not very active, each contestant confining himself to one speech.

The Association was unanimous in favoring active work against foul brood, and Mr. Kildow, the State Inspector, answered a number of questions. As a State appropriation of increased amount is needed, the question of taxation was raised, and the following resolution passed:

> Whereas, The bee-keepers of Illinois expect increased support from the State Legislature for the inspection of bees, also appropriations for the State Bee-Keepers' Association and for the

teaching of apiculture in the State College of Agriculture,

Resolved, That the Eastern Illinois Bee-Keepers' Association assembled at St. Anne this 4th day of February, 1913, declare their willingness to see colonies of bees put on the list of taxable property.

That we recommend a special tax of 2 cents per colony to be levied on all colonies of bees living on the 1st day of April, said tax to be employed for the above-named purposes.

The officers elected at this meeting are: President, G. T. Willis; Vice-President. W. F. Oberland; Secretary-Treasurer, H. S. Duby.

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Syrup Versus Honey.—An article under the title, "Our Great Sugar Debauch," by Bailey Millard, appeared in the Technical World for January, 1913.

Mr. Millard says that our annual consumption of sugar is 85 pounds per capita, or nearly five times as much as that of the average European.

"The quantity of syrup consumed in cheap city restaurants is incredible. Many a factory girl and department store saleswoman makes her entire luncheon from starchy wheat cakes swimming in "maple cane" or "corn" syrup, and no other dish. Most Americans satisfy their inordinate craving for sweets by the same sort of food at the home breakfast table. This practice is almost unknown in Europe, where they have better digestions than ours......Out at Rocky Ford, Colo., not long ago they paved a road with molasses, and the experiment proved quite satisfactory, as the surface is free from dust and hard as macadam—surely, a better use for this 'valuable food' than to pave your pancakes thick with it every morning.

"Dr. Herman Partsch, a well-known stomach specialist, declares that the average person eats about three times as much cane sugar as he should. The sugar bowl is banished from the table of his patients, many of whom regain their health by said banishment. For the same product he substitutes dates, figs, prunes and honey."

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Massachusetts Bee-Keepers' Meeting.—A Bee-Keepers' Day for the Hampshire, Hampden, Franklin Bee-Keepers' Association will be held March 20, during Farmers' Week in the Entomology Building, Massachusetts Agricultural College, at Amherst. Addresses on "Sacbrood," "Value of bees to agriculture and horticulture," "New methods for bee-keepers," etc., will be given.

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Mississippi Valley Magazine. — The Mississippi Valley Magazine, published at Quincy, Ill., contains a mention of the American Bee Journal and a quotation with complimentary comment of what we said, page 9, concerning the spontaneous growth of weeds on the river bed. We wish to retaliate. The Mississippi Valley Magazine is the representative of a growing cause. We wish it as lasting a success as that of the immense valley it represents.

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North Texas Meeting.—We have been notified that the North Texas Bee-Keepers' Association meets the first Wednesday and Thursday in April at Greenville. All who are interested are cordially invited to attend. The program has not been completed as this goes to press, but a large and interesting meeting is assured.

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Northern Michigan Bee-Keepers' Meeting.—The Northern Michigan branch of the National Bee-Keepers' Association will hold their next annual meeting at Traverse City, Wednesday and Thursday, March 19 and 20. The headquarters and meeting place will be at Hotel Whiting. A good program will be prepared, and we would like to see many new faces as well as the old ones.

Ira D. Bartlett, *Sec.*
East Jordan, Mich.

◆

Illinois Inspection.—I desire all the bee-keepers in the State of Illinois to send me a postal card, stating whether or not there is any disease in their locality, or if they have any suspicion that any bee-disease exists in their neighborhood. I will place their name on my mailing-list and mail them my second annual report or bulletin which is now in the hands of the printer.

This bulletin should be in the possession of every one who keeps bees, whether for profit or pleasure. Also state if you wish the inspector to visit your neighborhood the coming season.

A. L. Kildow,
Putnam, Ill. *Chief Inspector.*

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Death of W. B. Tegetmeier.—In November last, when in his 97th year, the death occurred in London, England, of W. B. Tegetmeier. At one time he

Under the Shade of the Japanese Morning-glory.

turned his attention to bees, and was the first to use, or at any rate describe (1859) the frame hive in England, unless we include the obsolete type invented by Munn. In 1858 and 1859 his observations on the formation of the cells of the honey-bee were published. Darwin, in "The Origin of Species," records his repetition of Mr. Tegetmeier's experiments in cell production.

A small, anonymous work of 30 pages, written by him, entitled, "Bees, Hives and Honey," was published in 1865.

At one time, about 1860, Tegetmeier was secretary of a bee-keeping society, but appears never to have been connected with the British Bee-Keepers' Association. GEO. W. BULLAMORE.

Death of D. H. Coggshall.—The bee-keepers form a closely related brotherhood, and take much interest in one another's affairs. This is the more true of those in the public eye.

Mr. David H. Coggshall, of Groton, N. Y., died suddenly in Sayre, while about to take a connecting train for Florida.

Mr. Coggshall was born Dec. 1, 1847, in Groton, in which township he made his home all his life.

On Feb. 24, 1869, he was married to Clarinda F. Smith, also of Groton.

THE LATE D. H. COGGSHALL.

Three children were born to them, two of whom reached adult years, Mrs. H. J. Blanchard, of Groton, and L. L. Coggshall, of Locke.

It was as an apiarist Mr. Coggshall was best known. He became interested in bee-culture in 1861, when he was given a swarm of bees by his grandfather, William Smith.

He began a series of experiments with them, and was very successful. He branched out in the business, and at one time had about 800 colonies. He was the first producer and shipper of extracted honey in this part of the State.

Mr. Coggshall bought a place in Stuart, Fla., about eight years ago, and had been there every winter since. He took a great deal of pride in the place, and built a house in the center of the three lots which he purchased. The rest of the property he set out to citrus fruit trees and cocoanuts. He also bought another lot adjoining the St. Lucie River, and built a dock and boat house for housing his gasoline launch, which has a capacity of 15 people. Without bees, of course, the place would not have been complete, so he purchased a few colonies, enough to keep his own table and his friends supplied with honey.

Arabian Honey and Wax.—The following is from a report by Consul Walter H. Schulz, Aden, Arabia:

"Arabian honey, which is frequently mentioned by historians as an important export from Aden in early times, is no longer an item in the export trade. Small quantities, however, continue to come from Mokalla, 400 miles east of Aden, and it is also exported from that place to India in small quantities. The decline in the honey and wax industry has been a gradual one for centuries, and is attributed to a diminution in the rainfall. The honey that comes to market in Aden is packed in gourds and goatskins, and sometimes in hollow pumpkins.

"Wax imports and exports are considerable, but include little or none of the Arabian wax, consisting largely of importations from Eritrea and French Somaliland."

BEE-KEEPING FOR WOMEN

Conducted by MISS EMMA M. WILSON, Marengo, Ill.

Winter Work

Mr. Byer says, page 52, "Here in Ontario, during the months of January and February, the bee-keepers do about the same thing as their bees—practically nothing, in so far as real work in the apiary is concerned."

To be sure, Mr. Byer, but isn't there a lot of work not really included under the head of work in the apiary that bee-keepers can profitably do during winter months?

Pretty good plan to clean all supers and hives not in use, and do any repairing that is needed. Make new hives, frames, supers, etc., if any extras will be needed for the coming season. If you use **T**-tins have them all cleaned, too. It gives one a comfortable feeling to know that everything is shipshape and ready for use at a minute's notice.

In this "locality" we like to have our sections all made, filled with foundation and put into supers, all ready to set on hives when needed. It is not pleasant to put in foundation in very hot weather, when the foundation will crumple down under your fingers. Of course, you can do it if you get up early enough, and use only the early morning hours, but why not have it all done before the weather gets warm, and have a comfortable time doing it?

Now, Mr. Byer, I venture to say there is a whole lot of work you do yourself during these same winter months. You wouldn't be a bee-keeper if you didn't. Own up now, don't you do heaps of planning about the bees while they are quietly taking their winter nap?

The winter is an excellent time to read up on bee-literature, especially to go over the bee journals that received only a hasty reading during the busy season.

[Not only is winter a good time for this, but the rainy days of March and April offer another excellent opportunity.—EDITOR.]

◆

A Lady Bee-Keeper of California

I am sending you a couple views of apiaries, as requested in the Bee Journal. I feel indebted to a lady tourist who subscribed for me, and I ought to *pass it on*. She saw my bees working in February last. I showed them to her, as I would to any other traveler, when I found that she had kept bees 10 years or more (Mrs. J. J. Glessner, of Chicago). She also gave me the book "Fifty Years Among the Bees." There are many who read the Bee Journal in the West.

A HIVE PERCHED ON A PEDESTAL LIKE A SUN DIAL.

The hive on a pedestal looks like a sun dial, and interests our visitors. These bees are in the valley. The others in the mountains, 5 miles away, will barely live, as the sage failed on account of the drouth. My 40 years of bee-culture have all been in California, with both pleasant and funny experiences. I read "Forty Years Among the Bees," loaned to me by a bee-keeper years ago. This book has put me in the best way of bee-keeping.

California Bee-Yard of Mrs. Lucy Sexton, of Goleta, Calif.

I will try to organize a club of California women bee-keepers, and will send more views.

(Mrs.) Lucy Senton.

Goleta, Calif.

Your letter is very welcome, together with those dainty pictures. Your 40 years' service certainly entitles you to rank among the veterans. We will be glad to have further items drawn from your long experience.

Honey Recipes

Honey-and-Nut Sandwiches.—Mix one cupful of honey with two teaspoonfuls of lemon juice, then stir in enough finely chopped nut meats to make a stiff paste. Spread on slices of buttered bread, cut into pieces, place two together and serve.

Honey Candy.—One quart of honey, three heaping tablespoonfuls of butter, two tablespoonfuls of vinegar, half a teaspoonful of baking soda, and two teaspoonfuls of lemon extract. Put the honey, butter and vinegar into a saucepan, and boil until the mixture will harden when dropped into cold water; then stir in the baking soda and the lemon extract. Pour into a buttered tin to cool. When half cold mark into squares, and when cold break apart.

Honey Fruit Cake.—Four cupfuls of flour, half a cupful of butter, three-quarters of a cupful of honey, one-third of a cupful of apple jelly, two eggs, one teaspoonful of soda, one teaspoonful of powdered cinnamon, one teaspoonful of grated nutmeg, half a cupful of currants, half a cupful of chopped candied orange peel, a quarter of a cupful of warm water, and a quarter of a teaspoonful of salt. Warm the butter, honey and apple jelly; remove from the fire; add the eggs beaten, then the soda dissolved in the warm water; add the spices, flour and fruit. Turn into a buttered-and-floured tin, and bake until ready.—*Ladies' Home Journal.*

FAR WESTERN BEE-KEEPING

Conducted by Wesley Foster, Boulder, Colo.

Moisture Over the Winter Cluster

The writer examined an apiary of about 100 colonies Feb. 2. The covers were removed and the general conditions noted. About half of the apiary had the Acme tin cover and inner cover which gives a space about 2 inches between the inner cover and tin cover. The holes in the center of the inner covers were closed by a shingle being laid over them or a piece of burlap stuffed into the hole. A few of the colonies had comb-honey supers still on, and these seemed to be drier and the clusters spread out better than some of the others. A burlap cloth placed over the frames, and the tin cover with a 2-inch space kept the bees in driest shape, *unless* part of the burlap extended outside of the cover when it would siphon the moisture into the hive and keep the bees damp. A few flat covers with burlap between cover and frames were also unsatisfactory, as there was considerable moisture and frost around the edges of the interior of the hive.

It is evident that the inner cover with a small hole in the center for the passing off of moisture ladened air is essential. Do not close the hole tight. A burlap cloth in place of the honey-board is good if all edges are kept under the cover.

Several combs of honey were examined. The honey was thick and well ripened. This was an agreeable surprise, as the honey gathered in the locality where this apiary is situated was not of very good quality, owing probably to the wet season. The danger that may come from disturbing bees in winter was shown. A third of this apiary had to be moved, to make room for the erection of a building, when there was considerable snow on the ground and the weather was not warm. These colonies had dead bees scattered throughout their hives, over the top of the frames, in the corners, and almost everywhere. The cluster had been disturbed, the bees scattered, and many, probably a handful in each hive, had chilled before getting back. Those hives in the apiary that were not disturbed, did not show dead bees except a few on the bottom-boards.

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Bee-Keeping on a Demonstration Train

The Colorado Agricultural College Extension Department will operate an agricultural demonstration train covering the larger part of Colorado, beginning Feb. 17 and continuing for one month. Bee-keeping will be represented with an exhibit, and the writer will go as attendant.

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Fremont County Bee-Keepers Organize

Bee-keepers met in Canon City a few weeks ago and organized the Fremont County Bee-Keepers' Society, with F. W. Brainard President, and Wm. Babberger Secretary-Treasurer. The association is small, but there are several elements that augur well. Most of the members live within a few miles of Canon City, so they can get together quickly. They have all suffered from fruit-tree spraying — this has driven them together for defense.

Colorado now has four county organizations manifesting a semblance of life, and there are three or four dead ones. But organization among the bee-men for real benefit never was in better shape than at the present time.

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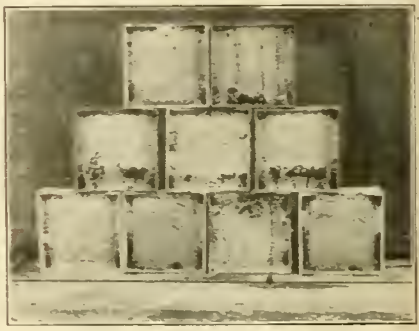


These Sections Average One Pound. The Leaky Cells were Built on a Curled Foundation Starter and Fast to the Separators.

◆

Prospects and Locations

The bee-men are now busy getting supplies ready for the coming season. Prospects are good, and we hope for a favorable season.

A letter just received from a bee-keeper in the Middle States asks about prospects in Colorado, especially the Uncompahgre Valley. It is hard for me to compare Colorado with the Middle States, for I know little about the locality where the gentleman is now located. Bees as a source of income are kept by a large number of people, but money is lost in Colorado bee-keeping about as quickly as anywhere. The Uncompahgre will compare favorably with any of Colorado's valleys. It lies in Montrose and Delta counties principally, and is supplied with an abundance of water—too much in places, as considerable portions of the land is seepy.

Eastern Colorado has better roads, and is more developed than the western part of the State. It has less water available for irrigation, but freight rates are less to and from markets. Land is possibly more productive in western Colorado, and the honey crops have been more uniform, although failures have been experienced on the Western Slope. Bees may be pur-

Batching Tent at the Out-Yard of a Colorado Bee-Keeper—60-Pound Can Cases Used for Chairs and Supports for the Table.

A Typical Plains Apiary of the Far West.

chased in many places all over Colorado so that a bee-man could buy cheaper than to move in a large lot. A personal investigation is recommended before a locality is selected.

Alfalfa Weevil Barred

An important amendment to the alfalfa weevil quarantine now in effect in California against Utah, Wyoming and Idaho, to include shipments of nursery stock into California from these States, was authorized today by State Horticulturist Cook. Hereafter no nursery stock from Utah, Idaho or Wyoming will be admitted unless wrapped in excelsior or some material which would not contain the pest, and unless the containers, both boxes and cars are fumigated.

The order was issued to further insure the $50,000,000 alfalfa crop of California from danger from the weevil.

The quarantine now exists against alfalfa hay, seed, bees, bee-hives and nursery stock. It is news to me that the alfalfa weevil pest may be spread by the shipment of bees and bee-hives. Of course, this would apply only to used bee-hives. Is not this a new way of keeping Utah and Idaho bees out of California ?—*Orchard and Farm.*

◆

The Colorado Apiary Act

A bill with the following heading is now before the Colorado Legislature:

"House Bill No. 144, 'A Bill for an Act,' to establish a division of apiary inspection and investigation under the State Entomologist; to provide for investigations in bee-culture and the inspection of bees for contagious diseases; to provide for the prevention and spread of bee-diseases; to provide for country apicultural inspectors; to provide for the transfer of bees from box-hives; to provide for the prevention of the poisoning of bees by fruit-tree sprays; to provide penalties for violations of the provisions of this act; to make an appropriation for carrying out this act, and to repeal all acts and parts of acts in conflict with this act."

The latest word from Hon. O. C. Skinner, Speaker of the Colorado House of Representatives, states that this bill, which was referred to the Committee on Agriculture and Irrigation, has been reported out to Committee of the whole with the recommendation that it pass.

[The bill is too lengthy to be inserted whole in the Bee Journal. Mr. Foster can probably furnish copies of it to parties interested.—Editor.]

SOUTHERN BEEDOM

Conducted by Louis H. Scholl, New Braunfels, Tex.

The Need of Pollen in Early Spring

Many of us do not realize the importance of supplying colonies with pollen early in the spring when the bees are not able to obtain it from outside sources. There are various circumstances under which bees are unable to breed up early, but one of the chief reasons is the lack of pollen with which to prepare the larval food. There are summers during which all the stored pollen may have been used in the breeding period, followed by a fall with no pollen yielding bloomers, and the bees go into winter quarters without a sufficient supply of this food material. This may be followed by a cold, long, drawn out spring, during which the bees are unable to gather any pollen, if there is any to be had.

Many localities are without early pollen yielders even in favorable spring seasons. It is apparent, therefore, that much can be done by the bee-keepers in furthering the progress of their colonies in early spring, so that they may be running over with bees for the honey flow, otherwise they may often struggle under difficulties. When the time of heavy breeding is at hand, ascertain whether the bees have sufficient pollen in store or are able to get it. If not, it should be supplied artificially.

The following letter is from W. R. Cunningham, of Rayville, La.:

"Friend Scholl: — On Sept. 16, I hived a late swarm, put it into an observatory hive and placed it in one corner of my living room, cutting a hole through the wall so the bees could go in and out. I gave the bees a deep comb with about 4 pounds of honey, with the intention of giving more as they needed it. I noticed on Jan. 11 and 12 that the workers were carrying out a few dead larvæ. The thought came to my mind immediately that I had not supplied them with pollen. I gave the colony a tablespoonful of flour. I had read of Dr. Miller's advice to feed flour as a substitute for pollen.

"To my surprise the bees fairly

rolled in the flour. In about two hours they had it all stored in the combs, so I gave them another spoonful. Next morning that was also gone, and I gave them three more. The elm began to bloom on the 16th. Since then all my colonies have done their utmost at gathering pollen and breeding up rousing colonies.

"After I learned that this colony in the house was so much in need of pollen, I thought it best to go out and investigate my other colonies. I put a quart cupful of flour near their usual feeding place, and you should have seen those bees scampering over each other and carrying the pollen home. Some of them fairly rolled in the flour, and were as white as could be, and there was a constant stream of bees flying to and from every colony. It only took them part of an afternoon to carry this amount to the hives.

"Now, I believe that if bee-keepers were to feed their bees some substitute for pollen in the early spring or the latter part of the winter, they would have rousing colonies with young bees that would be ready to gather the first honey flow."

[Flour substituted for the missing pollen in early spring is advised by most of our text-books. We usually pack it with the hands, in shallow boxes, located in some sunny, sheltered spot, as soon as the bees are able to fly. But we did not know that such a procedure was advisable as far south as Texas or Louisiana. There is no doubt of the efficiency of this substitute, if nothing else is to be found in natural pollen. Pressing the flour down into small ridges or lumps keeps the bees from drowning in it.—Editor.]

Comb or Extracted Honey?

Well do we remember when bee-keepers discussed the matter of producing more extracted honey than comb. Some bee-keepers even went so far as to say that extracted honey would replace comb honey altogether. I have been ridiculed for making bulk comb honey production my specialty. But the production of honey in the extracted form has exceeded the demand for it, and there has been a greater demand for comb honey.

There is always a keen demand for all the bulk comb honey that bee-keepers produce in connection with extracted honey; they have no difficulty in disposing of the former, but it takes them much longer to sell their crop of the latter. I have bought quite a number of lots of extracted honey that the bee-keepers had trouble in selling, although they had disposed of their bulk comb honey early in the season.

We are making a specialty of bulk comb honey, and this may have a tendency to bring us more orders for that kind, but we do not advertise, and in sending out our price lists we quote both comb and extracted honey. Even our letter heads show that we are producers and dealers of both.

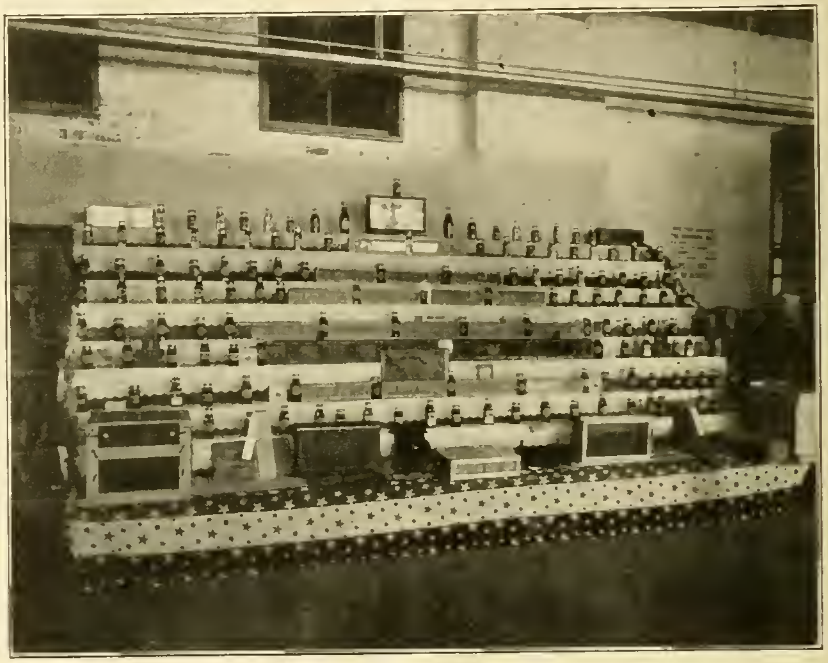
We are not advocating what kind a bee-keeper shall produce. Find out what your market requires. Of course, there are other circumstances that must be taken in consideration. Not all localities are good enough for comb-honey production, since the honey flows may not be strong enough, or the source of honey may not be a suitable one for fancy comb honey. In this case it will be better to produce extracted honey. These differences are felt more where section honey is produced, while it is not so difficult to produce bulk comb honey, with which we have to do here in the South to a greater extent.

A word of caution. It is, as a rule, to the detriment of the apiarist to jump from one thing to another every time something new comes up. It costs money to make rapid changes, and the change may prove an unprofitable one. If it is thought that another method is better, the change should be made gradually. If there is an advantage in a change after a fair trial on a smal scale, it is still time to make a more radical change.

Texas Prospects Most Favorable

Up to this time the prospects for a honey crop in the great Lone Star State are most favorable. It is to be regretted that we have planned every year lately for a good old-time honey harvest, and have missed our mark. However, this season begins somewhat differently. The great amount of moisture from the numerous rains that have prevailed over almost the entire State of Texas during last fall and the past winter, makes the outlook better by far than it has been for several years.

The bees seem to be in good shape and well supplied. Sometimes the season begins well, to end without a harvest, but it is hoped that this will not be the case this year.



Honey and Bee Appliance Exhibit of Louis Werner, Edwardsville, Ill., at the Madison County Centennial Fair.—Such exhibits at local Fairs help greatly to educate the public and increase the demand for honey.

CANADIAN BEEDOM

Conducted by J. L. Byer, Mt. Joy, Ontario.

Different Climatic Conditions

Our ideas of the climatic conditions of some other countries are apt to be at variance with reality. For instance, I have always thought that Switzerland had a very mild climate, but judging by what Mr. Anthony Biaggi, of Bellinzona says, some parts of the country at least have quite severe winters.

I ordered a few queens from Mr. Biaggi, and writing me a very interesting letter, he says: "Here on the Italian slope of the great chain of the Alps that bound north Italy, we have a very rigid winter, snow falls in November and remains until March." While nothing is said about the intensity of the cold, it must be fairly continuous or else the snow would not stay so long.

Our weather in Ontario this winter is rather peculiar, for until Feb. 1 it was much milder than the average winter. Since that date until Feb. 11 it has been quite cold, but at no time this winter have we had more than 6 inches of snow, and now we have none at all. How the clover will stand the winter remains to be seen, but naturally we would feel safer if it had a good covering of snow.

Transferring Bees

A lady bee-keeper in Florida writes me asking how to transfer bees into modern hives from "gums." Not knowing much as to the nature of the said "gums," I was at a loss to advise what would be the best way. My own experience in transferring bees has been with but a limited number of box-hives, but the following plan is the best for this job I think, and will apply equally well to any kind of a "gum." I think it is useless to advise some complicated plan to a person who has had but little experience with bees, as failure is sure to result, no matter how good the plan may be in the hands of an expert:

If I buy a few box-hives I leave them alone until they are strong enough to get the notion of swarming. If there are no openings in the top of the box, I make some with an auger, or the box may be turned upside down, providing the bottom-board is loose. Place a hive-body full of nice combs over the box-hive, and if it does not fit exactly, a few laths or other thin pieces of wood can be tacked around the sides where the two hives join. In a short time the queen will go above into these combs and start to lay.

Some day, after having prepared the colony in this way, take a queen-excluder, carefully open the top hive and lift up a comb or two to see if the queen is above. If she is on the combs quietly lift up the top hive with the combs in it, and slip the queen-excluder on top of the "gum." Then place the top hive back over the excluder.

All that is necessary now is to leave them alone for 21 days and then take away the lower hive, placing the top one on the stand in its place. All brood will be hatched out of the old box-hive, and the bees can be smoked or driven out and the contents broken up and disposed of as you see fit. There is nothing new in this plan of transferring, but I doubt if there is a better way of transferring when you wish to save time and avoid a tedious job.

The Inspector's Salary

Much has been said in the past relative to the inspection of bees. I am very much in favor of a strict system of inspection, but if we are to have the efficiency necessary for this work, the men who are sent out on inspection must be remunerated better than they are now. That statement from the British Bee Journal, copied in the American Bee Journal, page 43, gives my ideas on the matter so forcibly that I cannot forbear quoting the same again by way of emphasis: "Unless these men have had the practical experience of managing numbers of colonies successfully, they are surely not fit to be sent out to exercise compulsory powers over those of their neighbors; but if they have had such experience they must be worth a great deal more than they get."

It is easy to get men to go out on inspection work, but it is not easy, under present conditions, to get men *properly* qualified. Ontario has some good men at present who are acting as inspectors, but there have been a few who were not qualified for the work. The qualified men are, as a rule, giving their time at a sacrifice, for if able to inspect efficiently, they could make more money devoting the time to their own interests.

I am speaking from experience, for I was at the work 4 years myself. The present allowance is, I believe, the same as when I was at the work, viz., $5.50 per diem, and you pay your own hotel bills—livery and railway bills being paid by the department. This means about $4.00 a day net, and while that may sound like a big figure to some, bear in mind that often a bee-keeper has to go away from home when one day's absence may mean many times $4.00 of loss to him. While I am not a moneyed man, used to getting a big anual return, I could not afford to go on inspection work any more. The job would not tempt me if I were offered considerably more than the present remuneration.

Feeding in the Fall

On page 56 of the American Bee Journal, the Editor writes that J. L Byer says "that in Ontario they feed the bees as much sugar syrup as they will store in the brood-chamber before winter." "They," in this case, means only a small percent of bee-keepers who winter on the summer stands, but the few who practice this plan do not "think" it pays; they *know* it pays. While I know it pays, I have never put all of my colonies in that condition because of the extra work, and *fancied* extra cost. I say, "fancied," as I doubt if we have many seasons when the plan of heavy feeding, for outdoor wintering in a cold climate, will not pay good interest on the money invested, and return the principal the first season.

Mr. McEvoy contracts his hives when using this plan, placing his bees on five or six solid combs. At least one of our most successful men feeds his 10-frame Langstroth colonies all they will take late in September or early in October, and he gets it all into the bees, too, before the clover flow comes in June. But this is a dangerous doctrine to preach, as it would surely lead to overstocking if all practiced it. But no danger of that, too much trouble and too big a bill for feeding to suit the majority, especially as we have an occasional winter when the bees come through fairly well without feeding in the fall.

Carniolan Bees Preferred

At various times in the past *I have* championed the Carniolan bees, and have often wondered at some of the bad reports made in regard to them. I have been forced to the conclusion that, in some cases at least, mixed stock must have been tried instead of a good strain.

In a kindly appreciative letter lately received from a friend in Nebraska, I quote the following. It shows that at least a few appreciate the good qualities of those bees: "I wish to thank you for bringing the Carniolan bees to my attention. They have proved very satisfactory, as they are hardy, winter well, build up rapidly and early in the spring, and cap their honey white. It is a pleasure to handle them, as they are quiet and gentle after having handled a cross colony of Italians."

Wintering on Full Combs

The editor of one of our bee journals writes me: "I am with you on the winter-nest proposition, as I have 127 colonies fed up in the way you advocate—all wintering on the summer stands."

The plan referred to is that of feeding the colony all they will take in the fall (brood-nest can be reduced if desired), so that the bees can go into winter quarters on solid combs. My friend says that he will report in the spring as to how they winter; but I feel pretty sure, even now, as to the nature of the report, and venture to forecast that not a single colony will be the worse for the winter, unless queenlessness or other causes not relating to wintering affect them.

BEE-KEEPING IN DIXIE

Conducted by J. J. WILDER, Cordele, Ga.

Queen and Drone Traps to Control Increase

FRIEND WILDER:—I run my bees for comb honey, and do not wish any more increase. I haven't the time to go over the combs every 5 or 6 days during swarming time to destroy queen-cells. Can I use queen-traps over the entrances to confine the queens to the hives, and when the bees swarm let them go back, and save the swarms and get more honey? Should I kill the queens as I catch them in the traps, or let them go back in the hive?

Jefferson, Ga. W. A. GORDON.

Some years ago I tried traps for keeping down increase, but I was not successful, and I wonder if any one has ever been successful with them for this purpose. The bees will kill the old queen after several efforts to swarm, if she is confined there. When the young queens hatch they swarm again, and may keep it up for some time, if the young queens are confined in the hives in the same manner. Very often a small, inferior queen will hatch out and squeeze through the trap and away goes the swarm. Another objection is that young queens cannot get out to mate, and drone-layers and losses are sure to be the result.

If the old queens are killed as they are trapped, and you take out all the queen-cells except one, the bees will start more cells and swarm unless the combs are cleaned of brood. If the combs containing eggs and young larvæ be removed it involves considerable work, and the colony will dwindle down fast. Queen and drone traps are designed to catch queens and drones, or to confine drones to certain hives. They may be placed over the entrances of hives during the absence of the bee-keeper at swarming time, so as to save any swarm that may come out. The traps should be removed on his return.

[We believe Mr. Wilder's view is the correct one. Queen and drone traps will do for confining the swarm *temporarily*, but the killing of the old queen is often the result of keeping the traps on too long.—Editor.]

How to Hive Bees

Dear Mr. Wilder:—I want to know your method of hiving bees. I lose many swarms each season because I cannot hive them; or after I hive them they leave. I will appreciate the information you can give me.

Platteville, Ala. John C. Thomas.

The loss our industry sustains each season from the escape of swarms is something to lament. This great loss is mostly borne by those who are just entering our ranks, and it is the direct cause of much discouragement. No one should try to handle bees without a good bee-veil and smoker. If these are properly used there is no danger from bee-stings. A swarm-catcher is the best thing to hive bees with if used as directed, but a lot of beginners prefer to climb trees after swarms, and have all kinds of sad experience. To such bee-keepers I would suggest that the ready hive be placed on the ground or directly under the swarm of bees if possible. A little earth should be placed in front of the alighting-board, and leveled up to it so the bees can easily march into the hive when they are placed in front of it.—[A cloth or coarse gunny sack will serve the same purpose.—Editor.]

A lard can or large tin-pail makes a good vessel to catch a swarm in, as the bees cannot crawl out so easily. If the swarm is low enough to be reached from the ground, bench or table, the can should be held up under the bees as close as possible. Then the swarm is quickly jarred off the limb into the can and dumped in front of the hive. If the bees settle high up on the body or limb of a tree, use a pole of sufficient length and attach the can or pail to it.

It is not necessary to beat pans, ring bells, shoot guns, or make any great noise to settle swarms of bees, nor is it necessary to dampen them after they have settled. To keep them hived after they have marched in is an easy matter. Fasten an entrance guard or queen and drone trap over the entrance of the hive, then the queen cannot escape to go with the swarm, and it will have to return and be content. An entrance guard costs but 15 or 20 cents, and one may be worth from $15 to $20 to you during the season. In two or three days it should be removed, as the bees will then be contented and settled down to work. A swarm of bees should be placed on their permanent stand just as soon as they are hived.

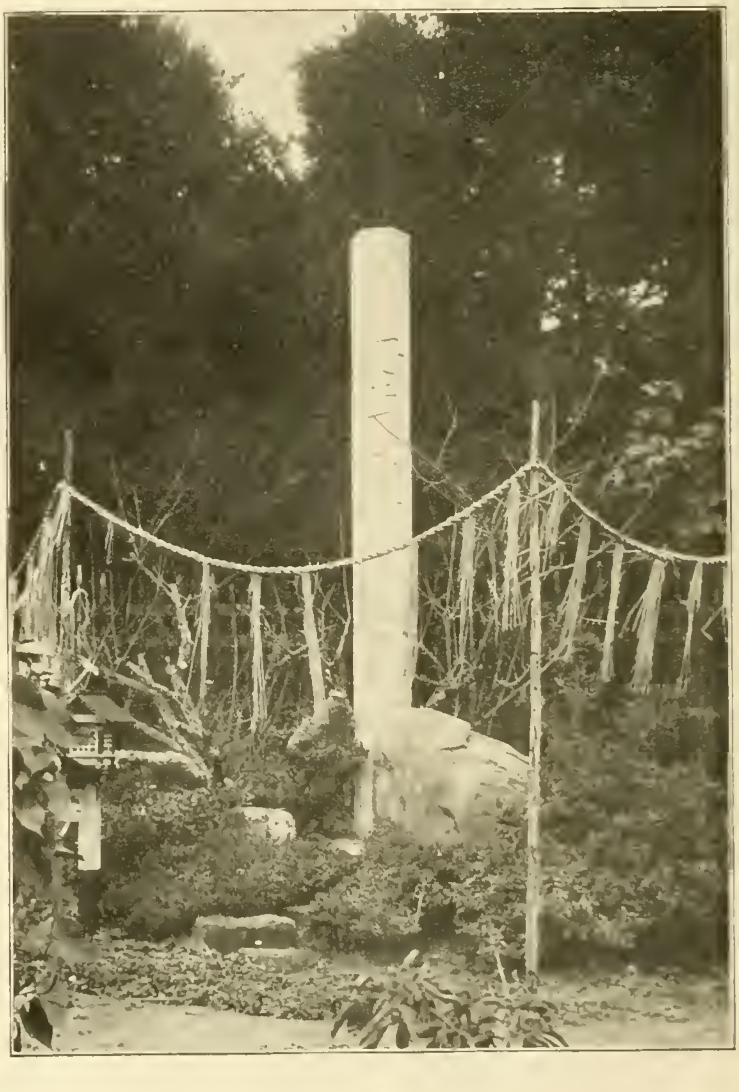
Do Bees Need Salt?—Overdoing It

Friend Wilder:—I washed some salty meat some time ago and poured the water on the ground near the apiary, and soon bees were taking it up. I then gave them some salted water, and they seemed to prefer it to fresh water. Augustus Williams.

Barwick, Ga.

I do not know that bees require salt, but I don't suppose they would object to a very small amount of it in their drinking water. I have tried to run them away from public watering places a number of times by sprinkling them heavily, but this had no effect. Very often when meat is cured a solution containing considerable sugar is used. Such might have been the case with you, and the bees were after the sugar the water contained.

I remember seeing the "saving power of salt" tried on a swarm, and it did not prove very effective. It was a swarm a distant neighbor hived. As soon as they were in, he raised the cover of the hive and gave them a good salting. He was very anxious for a start in bees, and thought this the way to keep them, but they were soon out on a limb. He sent for me, and on my arrival he expressed his surprise at their deserting the hive. He knew they had been salted enough. On examining the hive I found it nearly half full of salt. He told me his neighbor gave him the instructions to use it, and the more the better. He had carried out the instructions.



Erected to the Memory of a Queen-Bee Which Was Accidentally Killed While Investigating—This Monument Stands Near the Apiary of Mr. Yawata.

CONVENTION PROCEEDINGS

Sidelights on the National Meeting

The meeting at Cincinnati Feb. 12 and 13 was not very largey attended, only about 60 bee-keepers being present. But the meeting was harmonious. Changes were made in the Constitution according to the needs of present conditions. The committees selected to pass on the publication of the Review made some kindly criticisms, but recommended to accept the purchase of the publication. It was very evident every move taken by the Board of Directors was made in good faith and without profit to themselves, and that an honest management is carried on. All are willing to continue on the same footing. So no great opposition was shown by any one of the delegates.

In addition to the changes in the Constitution, which will be published in our next number, we will also publish a new set of honey grading rules as proposed by two committtees appointed by the Board of Directors, a committee of producers and a committee of dealers.

A resolution was passed to ascertain whether the former incorporation of the association is still in force. If it has been outlawed the Secretary is to secure a fresh incorporation, provided the cost is less that $50.

The officers elected are as follows: President, Burton N. Gates, of Massachusetts; vice-president, H. A. Surface, of Pennsylvania; secretary, E. B. Tyrrell, of Michigan; treasurer, C. P. Dadant, of Illinois. Directors for three years, E. D. Townsend, of Michigan, Wilmon Newell of Texas and Wesley Foster, of Colorado; for two years, J. M. Buchanan of Tennessee; F. B. Cavanagh, of Indiana.

An enthusiastic resolution was passed to extend a vote of thanks to the former General Manager, N. E. France, for his devoted and disinterested management in past years and a committee appointed to receive subscriptions for a lasting present to be given him in token of the esteem in which he is held. Although many of the delegates had already left for their homes, subscriptions to the amount of $48 were received in a few minutes and a committee composed of Dadant of Illinois, Cavanagh of Indiana and Allen of Wisconsin, was appointed to handle all subscriptions for this purpose and select a durable present.

Mr. France is very modest and for this reason the committee does not see fit to solicit any one. Those who are in favor of this action will please send their subscriptions to this fund at once to the chairman of the committee C. P. Dadant, Hamilton, Ill. A list of the subscription and the use to which it will be put, will be sent on request to any one of the subscribers.

A very decided expression was given to the advisability of holding at least one meeting a year in which only bee-keeping subjects will be discussed, where every one present will be on an equal footing with everybody else, without delegate privileges as to votes and where actual business will therefore be tabooed. A resolution was passed instructing the executive board to prepare at least one such meeting.

In the afternoon of the second day the Chamber of Commerce of Cincinnati treated the members to a trolley ride and a visit to the Rockwood Clay Works and the Cut Glass factory. The last session of the convention reached well into the night of the second day.

* * *

Report of the Washington State Convention

The Washington State Bee-Keepers Association met at North Yakima, January 8 and 9, 1913. There were present some of the most extensive specialist bee-keepers of the state numbering their colonies by the 400 and 500 and more.

The opening session was at about 11 a. m. and Judge Milroy welcomed the convention to the city in a very pleasing address.

SPRING MANAGEMENT OF BEES.

Robert Cissna, talking on this subject, advised a careful examination of the apiary. He marks only the weak and queenless colonies, and unites, putting the colony with the queen on top. Be sure the bees have enough honey to carry them along. More loss is occasioned through starvation in winter than from any other cause. Feed the weak colonies if worth saving, with combs of honey taken from stronger colonies, if you have no extra combs of honey on hand from the previous season.

THE NATIONAL AND ADVERTISING HONEY

Mr. George W. York, of Sandpoint, Idaho, former president of the National Bee-Keepers' Association, then spoke on the National Association, what it is doing, and proposes to do. He urged that every bee-keeper's organization become affiliated with the National, for "In union there is strength"; and there should be the fullest spirit of co-operation on the part of all.

Pres. Burdick spoke of the Washington Honey Producers' Association, of which he is manager. They handled over a carload of honey the past season at an expense of 10 per cent to the Association. He believes that the parcel post will help when it once gets under full headway, but it will need some improvement over its present plan of operation. In a co-operative organization, it is essential that every member be absolutely loyal, even if at times they may lose a little. In the end, success would be assured.

PREPARING BEES FOR WINTER.

Mr. Virgil Sires said that a goodly portion of young bees, a good queen, with plenty of good stores, and a hive-cover that insures the bees against dampness, are the essentials for good wintering.

He favors providing slight upward ventilation, through a quilt or packing of some kind. He places at least four thicknesses of burlap over the frames, putting the cover on this, and leaving an air space between the cloth and the cover. Never place the cover down tight on the cloth, far better, use no cloth at all, for when the cloth gets damp it does not dry out easily. If there is a space between cloth and hive-cover dampness more easily escapes.

Mr. Sires prepares his bees for winter at the last extracting; or if comb-honey colonies, when removing the last supers. If everything is in normal condition in the brood-chamber at that time, the hive is covered up for the winter. There should be at least 25 pounds of good honey in the hive, 30 or 40 pounds would be better. If the brood-chamber has not enough stores, he removes empty combs and replaces them with combs of honey.

In the locality of North Yakima Mr. Sires believes chaff-hives, or protection to the hive-body, is a needless expense.

BEE-KEEPING AT THE STATE COLLEGE.

Prof. A. Melander, the Washington State Entomologist, of Pullman, Washington, addressed the convention, saying the agricultural college would be glad to help the bee-keepers of the state. He desired to know just what they would like the college to do for them. The prospect is that a course in practical bee-keeping will soon be installed, and a thoroughly competent expert employed throughout the year. Prof. Melander captivated the convention with his pleasing manner and evident desire to get in touch with the bee-keepers of Washington.

LIQUEFYING HONEY.

Mr. A. G. Kuykendall described his method of liquefying honey, using a tank with steam-pipes running through it. Mr. York also explained in detail the methods and equipments which he used in Chicago, when he bottled some three car-loads of honey during the winter.

Mr. Cissna said he heated his extracted honey and bottled or canned it just as fast as it was extracted. It takes less heat at that time. He thinks that more honey is consumed if sold in the liquid form. He uses a three burner gasoline stove under a jacketed can into which the honey is put for heating. Great care must be used not to overheat the honey.

SELLING CANDIED EXTRACTED HONEY.

Mr. Starkey told his experience in selling candied extracted honey. He used common pasteboard oyster pails and put one pound of honey in each. He rosined the pails, then put the honey in liquid and let it granulate. They were soon all sold out in the grocery stores, and calls came for more. The pasteboard pail can be torn off, leaving the solid chunk or brick of honey, if any prefer it in that way. They retail at 20 cents each. This is a simple way to put extracted honey on the local or home market.

OTHER PAPERS.

Mr. S. King Clover read an interesting paper on "Weather Conditions Favorable for the Secretion of Nectar in the Bloom".

Two interesting papers were read. One by Mr. C. P. Dadant, Editor of the American Bee Journal, on Education in Bee-Keeping and the other by Mr. E. B. Tyrrell, Secretary of the National Association, on Benefits of the National Association to Bee-Keepers.

OFFICERS ELECTED—BANQUET.

The officers elected for the ensuing year are:

President, Dr. A. E. Burdick of Sunnyside; Vice-president, Lee G. Simmons of Ellensburg; Secretary, J. B. Ramage of North Yakima; Treasurer, Robt. Cissna, of North Yakima.

The banquet occurred at 12:00 noon. It was indeed a "banquet". The wives of the bee-keepers had provided all the good things to eat they could think of, and placed it on tables arranged in the rooms in the courthouse where the meeting was held. Of all the things to tempt one's palate, those Washington women surely had a great abundance. It was a very enjoyable occasion, and might well be duplicated in many other places where bee-keepers' conventions are held.—Geo. W. York, Sandpoint, Idaho.

CONTRIBUTED ARTICLES~

Michigan Prospects

BY E. D. TOWNSEND.

(President's address at the Michigan State Meeting.)

THE season of 1912 was a peculiar one in Michigan. The winter, to begin with, was of more unusual severity upon bees than for several years. The winter was followed by a spring of only ordinary weather for the breeding up of diminutive colonies, the result of a hard winter. Then followed a summer of rainfall. But bee-keepers were more fortunate than some of their brother agriculturists.

We had very good weather during the honey-flow from clover, raspberry and basswood in the latter part of June and the first part of July. The fall flow was a failure, with an abundance of flora at hand, and the weather was so bad that bees could not take advantage of it. The shortage of the fall flow of honey has left many bees in bad shape for winter; for they did not breed up as they usually do in a good season. Many colonies were short of honey for winter stores, and where not fed, may starve before spring. The enterprising bee-keepers, the ones who may expect good returns from their bees another season, have provided them with stores to last them until the honey-flow next June.

It has been said that there is a "silver lining to every cloud." I *know* that there is a silver lining to the cloud of winter loss, and brood diseases among our bees, for I see our State nearly free from the "cheap John" 10-cent comb honey so prevalent in past years. These bee-keepers are nearly "off the map," leaving the territory and market for the more enterprising, the leading bee-keepers of the future. The thoroughly posted bee-keeper is not afraid of hard winters, or disease among his bees, for he knows how to eradicate the disease, or refill his hives with bees after a hard winter.

During the year much has been printed about the advisability of producing more comb honey instead of extracted, the comb-honey crop being short. This agitation will likely cause more comb honey to be produced another year, and if one is fitted up for the production of extracted honey I see no reason for an expensive change in apparatus.

Michigan's product is the finest honey in the world. and her intelligent bee-keepers, whether comb or extracted honey be produced, will never have trouble to find a market at the *highest price*. Michigan's 1912 crop of both comb and extracted honey will all be sold long before the 1913 crop is ready for the market. This is a healthy condition that should be appreciated.

Since our last meeting in Saginaw, a year ago, we have lost two valuable members, Hon. R. L. Taylor, of Lapeer, Mich., and Byron Walker, of Clyde, Ill., who claimed Michigan as his home. The committee which I will appoint later will kindly see that suitable resolutions of sympathy be extended to the bereaved families.

We need a new law on bee and brood diseases. Two years ago we secured a very good law through the Legislature, which was forthwith vetoed by Gov. Osborn. We now have a Governor-elect, who, I am quite sure, knows the value of the bee to agriculture and horticulture better than does our present Governor, so we hope for better usage next time. A Legislative Committee of three members was appointed at Saginaw a year ago to hold over until this meeting. We will hear from them later. I hope something tangible will come from this committee, as we are sorely in need of a better law than we now have for the suppression of disease among bees.

Northstar, Mich.

An Austrian's Impressions of Japanese Bee-Keeping

BY ALEX SCHROEDER.

MRS. SCHROEDER and myself crossed the United States this year (1912), coming from Japan, where we passed some most interesting weeks.

On March 23 last, the meeting in Gifu, Japan, of which your number for October, 1912, brought such nice pictures, was held by over 700 Japanese bee-keepers, representing the towns of Wakajama, Hiroshima, Nagasaki, Saga, Ehime, Kagawa, Kanazawa, Aichi, and Miye, and proved a very interesting one. The discussions were animated, and about most important points, as, for instance, the uniformity in dimensions of frames and hives, the necessity of having a better race of bees, etc., proved that the little Japs are progressing also in this branch of agriculture, which the Austrian bee-master, Baron Ehrenfels, called "the Poesie of Agriculture."

We had occasion to visit a prominent bee-keeper, Mr. S. Tamura, of Chiojima, in one of the suburbs of Kioto, the thousand temple town in Japan, and found him to be quite up-to-date. I beg to enclose a photograph taken in his interesting bee-yard on April 1, with a changeable weather between sunshine and snow. Mr. Tamura received us in the Japanese style of extreme politeness, showed us all about his yard and magazine of bee-supplies, which were full of the most exactly-made implements of all kinds and tastes.

His hives are made in the American style. He winters his bees outdoors in double cases, filling the space between the body of the hive and the outer box with rice-bran, and covers the frames with newspapers. He showed me a strong Italian colony containing brood in all stages, and even some beginnings of queen-cells, and provided with lots of sealed honey.

It was a pity that I could not speak Japanese, or that he did not know any

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of the European languages. So our conversation was not very animated, but still we managed very well. When I declared the bees of the hive open in the photograph were "Italian bees," and the one to the right "Carniolan bees," he was very well satisfied, and to my question, why he had no Japanese bees, he replied, "No good." He showed us also a small house where pictures and illustrations, as well as diplomas and like printed matter, were exposed in glassed frames, one of them showing the features of "Langstroth;" in another the British Bee Journal of April 1, 1909, containing the picture of Mr. Tamura himself.

Mr. S. Tamura, of Kioto, Japan, in His Apiary.
Italian and Carniolan bees are kept in hives of American style.

After we had been shown all about the yard we were taken into his house, a small Japanese building, where we were treated to tea and sweets, and, on leaving, he presented us with two glasses of his honey.

We were very well satisfied with our call, and glad to have been able to meet a progressive bee-keeper in Japan.

Trieste, Austria.

Cypress or Pine?

BY A. F. BONNEY.

IN THE American Bee Journal for January, page 28, Dr. Miller replies to an inquiry that "my guess would be that pine should have the preference, but I have had no experience with cypress."

The writer, not long ago, read that in the city of New Orleans some cypress water pipes were taken up after lying in the ground for 100 years, and found to be as sound as new wood. The cast-iron plugs which united the log pipes were about rusted away.

I do not doubt this, for cypress logs are now being dug from the swamps of the South to be cut into lumber. I have hives of cypress bought two years ago which have been sitting in damp to wet ground, winter and summer, since then, and they show no sign of decay.

I do not hesitate to express the opinion that an unpainted cypress hive will never decay. If not painted, the boards may warp, as to that I do not know, but shall another season, as in the spring I shall put some into use. The lumber is heavier than pine, but is easily worked, and being compact holds nails well. I think it the ideal lumber for hive stands and bottom-boards, and it may prove to be for hives.

Buck Grove, Iowa.

[The above short article was referred to an old carpenter of great experiperience, who was, in his young days, a builder of sugar mills and plantation homes in the country of cypress, Louisiana. He says that although this wood is a little heavier than pine, with a closer grain, it is very serviceable and durable, does not warp, and has been used largely for shingles and weather boarding, as well as for inside finish. The only possible objection to its use is the matter of price. Good cypress is a high-priced wood in the North. But white pine will soon be still higher priced.—Editor.]

Ventilation of the Hive

BY ISAAC HOPKINS.

HAVING given much attention to the ventilation of hives, and endeavored by a fairly exhaustive series of experiments to find out what part the bees play in it, if any, and the best method of securing the most perfect ventilation, I was much interested in the article on the subject by your able contributor, D. M. Macdonald, in the May, 1912, issue.

There is much in Mr. Macdonald's statements that I cannot accept, and even our ordinary experience points to an opposite conclusion.

What I have to say is chiefly connected with summer ventilation, though it applies also to our winters, where, in most districts of New Zealand, the bees are more or less active all the year around. I have no experience with cellar wintering. Where I differ with Mr. Macdonald, and where I feel sure he is wrong, is in his insistence that upward ventilation is necessary to secure "a warm, dry interior (to the hive), with a supply of fresh, sweet air enveloping the cluster."

Bees often take up their abode in buildings, as Mr. Macdonald says, where there is ample ventilation on all sides, and the same may be said when they build in the open, to the branch of a tree. But this has no bearing on the question of ventilating, where the bees are domiciled in a confined space, this being a different matter altogether.

We cannot get away from the fact that bees endeavor to stop every chink of the hive, except the entrance, with propolis, whether above or at the sides, especially toward winter, and in districts where I have lived among pine trees, where gummy substances were plentiful, the mats or quilts in spring have been so plastered with propolis that it has been difficult to tear them off the frames—the hives were hermetically sealed above the frames. Our friend has labored hard to prove there is upward ventilation in hollow tree-nests and straw skeps after the latter have been propolized. In this connection, I might ask him why the bees propolize straw skeps, mats, and chinks if it is not to stop upward ventilation?

Hollow-tree nests are common in the New Zealand bush, and though I am quite familiar with them, I have never seen one that afforded means of ventilation except by way of the entrance.

In Gleanings in Bee Culture for Oct. 15, 1911, I gave particulars of a series of experiments carried out by a friend of mine (the Rev. J. R. Madan) and myself, in the months of January and February, 1889, in Auckland, N. Z., latitude 37 degrees south. These being our two warmest months, afforded the best period of the year for carrying out such a test, and the results arrived at were very conclusive, so far as we were concerned. Our tests were carried out with a one story and a two story hive. They were continuous, and extended over the best part of the two months. We had as many as 17 thermometers in use at one time, 12 inside of the hive and 5 outside. Each of the 12 was insulated, so far as any contact with the outside air was concerned, as it was possible to make them, and the hive was prepared in such a way that each instrument could be instantly withdrawn for reading without opening it. Readings of each thermometer, both outside and within the hive, were taken about every hour, from very early in the morning until late at night, and noted, together with the direction and force of wind; in fact, both my friend and myself being scientifically inclined as laymen, we endeavored to eliminate all possibility of error.

We used different kinds of mats over

the frames, some were very porous, open scrim ("burlap," I think is the American term), some less porous, two or three layers of stout paper, enameled cloth, and several times absolutely hermetically sealed the hive. In all these cases, while the entrance remained the same, there was practically no difference in temperature within the hive. Quoting from one of my notes made at the time, and mentioned in Gleanings: "The most notable features are, (1), that the temperature at the top, just under the mat, was always lower than that, 3 inches below; (2), that the lower thermometer (near the bottom-board on one side) was highest until the sun set; and (3), that when the external temperature fell there was always a fall inside the hive."

The difference in the temperature between the upper and middle parts of the hive ranged from 3 to 6 degrees, and on one occasion 8 degrees. The two thermometers, one on each side of the entrance, and projecting inside the hive, always indicated a difference of several degrees. This fact, in conjunction with the results of each phase of our experiments, pointed unmistakably to the conclusion that the bees under all conditions carry out their own ventilation, and that the vitiated air is driven out of one side of the entrance, while fresh air is drawn in at the other.

Mr. Macdonald speaks of the carbonic acid gas given off by the bees, and also of moisture within the hive, both of which must be gotten rid of, with which I quite agree. It would, however, be interesting to learn how our friend arrives at the conclusion that "it may be taken as correct that the consumption by the bees of 24 ounces of honey will produce no less than 18 ounces of water!"

It seems a most extraordinary statement to say that a given quantity of honey will produce 75 percent of water when consumed by bees. When first gathered, nectar rarely contains more than 25 percent of moisture, and usually much less; and as I presume it is the more ripened article the bees consume as a rule, more than 50 percent has to be accounted for, and this amount we could hardly expect to be supplied by the conversion of the other constituents of honey.

Both water and carbonic acid gas are heavier than the atmosphere, though both up to a certain point are suspended in it. Carbonic acid gas is more than half as heavy again as ordinary air, and the average amount in the air is three-tenths of one percent, varying a little in different situations. If the proportion of this gas is greater within the hive, its tendency will be to fall to the lower part, and the same with the moisture; hence, I take it, the reason why the bees find it necessary to ventilate downwards, and through the entrances, rather than upward.

Another experience, mentioned in Gleanings, is very convincing to me. In my early days of bee-keeping, 40 years ago, when porous mats and contracted entrances in winter were advocated, I, of course, followed the general rule, and as a result had plenty of moldy combs to deal with in spring when first opening up the hives, and also mild cases of dysentery through soured food. Later on, I concluded that the need of some better system of ventilation was the cause of the trouble, but it was not until the experiments mentioned were carried out that I became thoroughly convinced that the general idea of upward ventilation was wrong—I have never had a moldy comb since.

To facilitate perfect ventilation as indicated and carried out by the bees, a liberal entrance must always be provided both in summer and winter, and this I have advocated and adopted myself ever since with perfect satisfaction.

Auckland, New Zealand.

European Foul Brood

BY EUGENE BAKER.

MY EXPERIENCE with this disease has not made me a convert to the generally accepted theory that Italian bees, and especially golden Italians, were most immune.

In the spring of 1911, my apiary, located near Duarte (views of which accompany this article), contained 64 colonies. Ten had golden Italian queens, three leather colored, and one an Albino; all from a prominent eastern breeder the previous autumn. Those in the remaining colonies were decendants of Italian queens purchased at different times in the East, few of them being purely mated.

Until two years ago European foul brood was unknown in southern California. Although a subscriber to all three bee journals for years, I always skipped the articles on foul brood, and consequently very readily diagnosed the disease as chilled brood. It was not until a neighboring bee-keeper, Mr. Blair, sent a frame to Washington and received the assurance that it was the genuine European foul brood, that I knew what was the matter.

It was then late in the season, and in the meantime I had lost nearly half of my colonies. I at once sent for our inspector, Mr. George De Sellem, and he found all the remaining colonies affected. He later found the disease in every apiary he visited in my vicinity. Strange to say, the golden Italians had been the first to succumb, then the leather colored, and as far as I could judge there were only two colonies left that had pure Italian queens and they were badly diseased.

While Mr. De Sellem is an expert with American foul brood, at that time he had had practically no experience with European, and was undecided whether to treat them at once or leave them until spring. We finally decided to treat some of them at once by the Alexander plan, and he helped me find and kill the queens in 24 of them, which I later requeened with Carniolans purchased from Mr. B. B. Hogaboom. Twenty-one queens were successfully introduced, and all the colonies had plenty of stores for the winter.

When I examined the bees last spring I found every colony having a Carniolan queen in fine condition and perfectly healthy, and all of them have remained so. Every other colony was badly diseased, and only 32 colonies left, all told.

In the same yard were about 60 colonies, owned by Mr. Bliss, from whom I leased the ground. They were all more or less diseased the previous season, and had not been treated at all. He requested me to care for them, as he was too busy. I found nearly half of them dead, and the combs destroyed by moth worms. By uniting I formed 20 pretty fair colonies, which, in connection with my own, I treated at the beginning of the flow by placing the

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queen in a clean hive containing empty combs, or combs with honey but no brood, and the brood above an excluder, removing the most affected combs. In every case where the colony was strong the combs were cleaned out and filled with honey, the new brood below being healthy. In the weaker ones it was necessary to repeat the treatment and requeen with Carniolans.

By way of experiment, one Italian colony, which had failed to respond to the above treatment twice, was requeened on Aug. 18—nothing being done but to remove the Italian and introduce the Carniolan immediately. This colony was the only one in the apiary having the disease at that time. On Sept. 30 I examined it, and to my surprise, every cell was clean, the new brood being as fine as you would wish to see. Why the old bees should do for the Carniolan what they failed to do for their own queen is beyond my comprehension.

Apiary of Eugene Baker. Duarte, Cal.

Apiary in Southern California Where Carniolan Bees are Preferred to Italians.

I am led to believe that European foul brood is not carried in the honey, from the fact that a stack of seven 10-frame hives containing honey and diseased brood taken from colonies for rendering, was left uncovered by some careless visitor and robbed out, with no bad results.

The Carniolans are hustlers, non-propolizers, gentle, and, handled in the same manner, I have not found their swarming propensity more developed than in any other bees. I am very much pleased with them so far, and inclined to adopt them exclusively.

Mr. Blair found many of his Italian colonies re-infected this spring, and after satisfying himself that my Carniolans came through perfectly healthy, he requeened most of them with Carniolans, and he recently told me that he thought all of his bees were free from the disease, and that if he had requeened with Carniolans instead of Italians last year, he would have had more bees and more honey this year. He has over 100 colonies. Two years ago he had 216.

Los Angeles, Calif.

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Some Observations Concerning Comb vs. Extracted Honey

BY B. KEEP.

THE question of comb vs extracted honey can never be decided in favor of either to the exclusion of the other, each has its proper sphere, and always will have. But comb honey, by reason of the form in which it reaches the table (in a small package), and the manner in which it is eaten, stands as a luxury. Only a very moderate quantity can be eaten by each individual—a little suffices to satisfy, and the cost is more or less suggested by the gingerly small portions served to each person.

There is, on the contrary, an unlimited field for extracted honey. It is unnecessary to try to state all its possibilities. I am not discussing the production of either form of honey; that is a question for each producer to decide for himself.

The demand for comb honey being, as outlined above, self-limited, it remains for the honey men, both producer and dealer, to educate the people in the use and the possibilities of liquid honey. When purchased in pint, quart, half gallon and gallon quantities, honey does not fall under the head of luxuries, although it may not be considered a necessity. When purchased in those quantities the cost of each spoonful is not in evidence, and when a person once becomes acquainted with the many delicious combinations possible in consuming it, there is but little desire for wax with it.

Comb honey will always have a demand to be met, but from the nature of things no great increase can be expected. Comb honey is a luxury. Extracted (or liquid) honey is not a luxury. Will it not then be advisable to concentrate efforts to popularize and increase the demand for honey upon the cheaper, more plentiful, and more convenient liquid honey? This is not a reflection upon comb honey, but rather a suggestion of the most promising direction of the market for honey, either kind of which any beekeeper can produce, as he may see the demand and his locality may permit.

Lyndhurst, N. J.

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Eight and Ten Frame Hives

BY DR. C. C. MILLER.

ON PAGE 16, there seems to be a difference of opinion between J. J. Wilder and ye editor. Each is entirely right—from his point of view. Editor Dadant says, "Properly made hives should have the same space, *per frame*, whether they are 12-frame hives or 6-frame." Aye, "should have;" but they don't have; at least 8-frame hives and 10-frame don't. And however clear that may have been in Editor Dadant's mind, the importance of the matter is sufficient warrant to go into it a little more fully.

The inside width of an 8-frame hive is 12⅛ inches. With frames spaced 1⅜ inches from center to center, 2¾ inches must be added to the width to make it accommodate two more frames. That would make the width of a 10-frame hive 14⅞ inches. Instead of that, the width of 10-frame hive is 14¼ inches! To put it in other words, to accommodate the two additional frames requiring 2¾ inches, only 2⅛ inches are added. A shortage of ⅝ of an inch.

In an 8-frame hive, the 8 self-spacing frames take 11 inches, leaving a space of 1⅛ inches. That leaves plenty of room for a dummy at one side. With the removal of the dummy, the taking out of the first frame, or indeed of any frame, is an easy matter. If worst comes to worst, so much glue having accumulated as to make it troublesome to get out the dummy, the dummy may be omitted entirely. Yet that has not been found necessary by the writer during all the years since these hives were first introduced, although there are some who prefer to omit the dummy from the start, allowing a liberal space at each side of the hive. So it comes to pass that taking the frames out of an 8-frame hive can never become a very difficult matter.

In a 10-frame hive, the 10 self-spacing frames take 13¾ inches. That leaves a space of ½ inch, or ¼ inch at each side. The frames may be all crowded to one side, and with the ½-inch space left at one side, it seems there ought to be plenty of room to take out the first frame. But that ½ inch is not a constant factor, for glue constantly crowds the frames a little farther apart, making the side-space so small that getting out the first frame becomes a matter so difficult that Mr. Wilder well says he prefers to use 8-frame hives.

The question arises: Why is room for a dummy allowed in the 8-frame hive and not in the 10-frame? Like enough the craze for economy of material suggested in the first place that a 10-frame hive might do with no dummy

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and ½-inch space. But whoever has tried, side by side, 8-frame and 10-frame hives, has no doubt concluded that after there has been some accumulation of propolis, the space in the 10-frame hive will not do as compared with the 8-frame.

More important than the question as to the origin of the limited space in the 10-frame hive is the question why this handicap has continued upon it all these years. If the extra space is a good thing for the 8-frame hive, it is an equally good thing for the 10-frame. If the 10-frame is just as well without the extra space, so is the 8-frame. Is there a ghost of a reason why the two should be different? In other words, why there should not be, as Editor Dadant says, the same space *per frame* in each hive? Perhaps the answer will be that there are thousands of hives of that particular size already in existence, with covers and other parts to correspond, and it would make confusion to intoduce a size just a little different. But that argument hardly appeals to the bee-keeper, especially to the beginner, however strongly it may appeal to the manufacturer. In fact, to the practical bee-keeper it appears little less than an outrage that this wrong, this handicap upon the 10-frame hive should be continued year after year.

The trouble is that the beginner does not know, while his hives are new, the trouble in store for him, and after he has learned about it he has so many hives on hand that he quietly submits rather than to have two sizes in the same apiary. Before he has stocked up to any considerable extent with hives measuring 14¼ inches, inside measure, he will do well to demand 14⅞. Even if he has to pay a little more for the unusual size, it will be money well spent. Let the 10-frame hive have just as fair a chance as the 8-frame.

Marengo, Ill.

[We have also a letter from A. C. Miller, of Providence, R. I., calling attention to the fact that the manufacturers make the 10-frame hive smaller, per frame, than the 8-frame. The trouble with me is that I have been using a 10-frame hive which has the regular one-and-one-half inches for each frame, and have never given thought to any other. There is a difference between what *is* and what *ought to be*. Below is A. C. Miller's letter.—Editor.]

In the January issue, page 16, in a foot-note to Mr. Wilder's comments on 8 and 10 frame hives, you say, "Properly made hives should have the same space *per frame*," etc.

In good old times 10-frame hives were 20 inches long by 16¼ wide, outside, but about 20 or more years ago the supply men made even figures, and all hives were made 20x16 inches. That lost quarter of an inch is as troublesome as an extra inch on a man's nose, and is at the bottom of such trouble as Mr. Wilder refers to. Last year, I understand the manufacturers went back to the 16¼-inch width. It will make nice fun for those who use covers like the "Colorado" and "Metal Topped" fitted to the 16-inch width.

There will be a loud noise by and by.

The 12-Frame Langstroth Hive

BY R. F. HOLTERMANN.

THE report of Mr. Greiner, pages 56 and 57, in connection with the New York State convention, interests me. The wedges which I use, mentioned by Mr. Greiner, are kept in place by driving a tack through the thin end, the point of the tack going through the wedge, and when inserted, this tack sticks to the bottom-board or brood-chamber.

In the last lot of hives I have had made, the wedge idea is embodied in the hive side. I had to learn that the space under the combs did no harm after the close of the honey-flow.

The third line from the bottom of the third column, page 57, states that I use 8 frames in the 10-frame space in the supers. I may have said what I did not mean. It should be that I use *10 frames in the 12-frame super space.* I value the 12-frame hive to such an extent that when I buy bees in the 10-frame hives, I take out the combs and put them into the 12-frame brood-chamber, waiting an opportunity to sell the former. Let no one get the impression that I use a Langstroth hive less than 12 frames.

The bees appear to be wintering well here. They had a cleansing flight late in December, and at present it looks as if bees would come through much better than a year ago; however, it might yet prove to be a very late spring and bees might suffer.

Brantford, Canada.

The Name of Spanish-Needles

BY JOHN H. LOVELL.

IN THE American Bee Journal for December, attention is called in an editorial to Spanish-needles, a most valuable honey-plant of the Mississippi Valley. Further information in regard to the Latin and English names of this plant, it is added, will be given later. This species, in the lowlands of the Mississippi River, covers large areas, and when it blooms in September the golden-yellow rays present a most brilliant display of color. The flowers secrete nectar in great abundance, which yields a golden honey of great excellence and popularity.

Late in the fall of 1912, Mr. Dadant gathered specimens of the fruit of this species, and of another taller plant belonging to the same genus and growing in the same situation. The latter species has small rays, and it is not at all conspicuous. The plants had long been out of bloom, and there would seem to have been little but dead material to collect. These dried specimens were sent to me through Mr. E. R. Root for determination.

The identification of the shorter species, or the plant so valuable to bee-keepers as a source of honey was undertaken first. The material consisted chiefly of achenes (the so-called seeds) and involucral bracts. After a careful examination of all the characters available, the plant was referred to *Bidens aristosa* (Michx.) Britton. In one particular, however, it differed from the 7th edition of Gray's Manual, the awns were downwardly instead of upwardly barbed; but, according to the Illustrated Flora of Britton and Brown, both forms occur.

Under these circumstances it seemed desirable to have my determination verified by an acknowledged authority. At the Gray Herbarium of Harvard University, there is ample material of all the species of Bidens for comparison. Accordingly I sent part of the fruit to Prof. M. L. Fernald, who is a joint author with Dr. B. L. Robinson, of the 7th edition of Gray's Manual, and one of the first anthorities on the American flora, stating that I had idenfied the species as *Bidens aristosa.*

A few days ago I received a letter from Prof. Fernald, in which he says:

"The fruit you sent was recognized as that of an anomalous variation of *Bidens aristosa*, in which the barbs of the awns are retrorse instead of ascending. I have several times started to look into the matter, and have been as often interrupted, so that today, for the first time, I have actually got down to the question and followed it through. For the present the plant had better pass as *Bidens aristosa*. In its awns it shows a distinct departure from that species, but not in its other characters. We have considerable material from Illinois and Missouri, and it seems to be so abundant that I shall soon publish it as a variety."

The species is, therefore, undoubtedly *Bidens aristosa*, under which name it should pass until it has been described as a variety by Prof. Fernald, when the varietal name should be added.

As to the English name Spanish-needles, in view of the fact that there is another species of Bidens (*B. bipinnata*), which is also called Spanish-needles, it would no doubt be better to give the honey-plant another name. But this is easier said than done. We understand that in the region of the Mississippi Valley it is generally called Spanish-needles. If we change the name on paper, the farmers and bee-keepers will still continue to call it by its old name.

But to what name could we change it? Gray's Manual gives no common or vernacular name for *Bidens aristosa*, while Britton and Brown call it tick-seed sunflower, which is no better than Spanish-needles. It frequently happens, indeed, that several different species have the same common name. In this very genus of Bidens several species are called beggar-ticks, while a

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variety of plants pass under the name of thistle and sunflower.

It seems better, therefore, to retain the name Spanish-needles, but to prefix to it some adjective, such as showy or yellow, to distinguish it from the other Spanish-needles (*Bidens bipinnata*), which has small heads with the rays short or none. We suggest that the honey-plant (*Bidens aristosa*) be called large-flowered Spanish-needles, and that *bidens bipinnata* be called small-flowered Spanish-needles. This will permit the name to be retained, and yet prevent confusion.

The tall species of Bidens gathered by Mr. Dadant, and sent to me is *B. frondosa* L. The flowers are inconspicuous because the rays are small or absent. This is a very common and widely distributed species, extending throughout the eastern United States, and from Florida to Texas in the south, to Nebraska in the Central States, and northward to British Columbia. Some of the common names of this plant are beggar-ticks, stickseed, beggar-lice, and pitchforks.

No specimens of *Bidens bipinnata* were received, and this may not occur at Hamilton, Ill. It is not found in Maine, and is not given in the list of the plants of Vermont. It extends southward from Rhode Island to Mexico and tropical America. It may be distinguished by the following characters: The long achenes are angled, usually 4-awned, the awns very unequal, downwardly barbed, the barbs rather coarse.

Waldoboro, Maine.

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Sacbrood

BY MORLEY PETTIT.

I HAVE just read your editorial on page 41 of the American Bee Journal about dead brood. I can also say that I never saw any of this before starting inspecting, and attribute this to the fact that we were always careful to keep our colonies up in good shape at home. On inspection work I have found a great deal of this dead brood, which is neither of the varieties of foul brood. It has just been described by a bulletin from the Department at Washington, as being of a slightly infectious nature, although the bacterial cause has so far not been isolated. It has been named sacbrood. (See page 47.—Editor.)

I have found it mostly in colonies of black bees, where no new queens had been introduced for a number of years, and the stock was run out.

As to bee terms (page 42), I am Irish enough to have adopted the term "beekeeper" without the hyphen before I ever knew that Editor Digges was doing this. I never took the trouble to look it up in the dictionary, but decided it was the best way to spell the word, and after considerable struggle with proof-readers in getting out my mailing matter, have succeeded in having the term used in all publications and bulletins from this Department.

You ask, "Has honey advanced with other food products in prices?" I claim that it has not, even in Ontario where the price has advanced 5 cents per pound since the Crop Report Committee started operations about 10 years ago. It is simply wonderful the amount of work that can be done by judicious advertising and holding together on the part of the bee-keepers.

Guelph, Canada.

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Reminiscences of Smoking Bees

BY G. C. GREINER.

MY EARLIEST recollections on the above subject date back to the spring of 1876. During the preceding fall and winter we had manufactured and sold to the surrounding bee-keepers within a radius of six or eight miles between 175 and 200 hives. Nearly all of these bee-keeping friends were farmers, keeping anywhere from 1 to 20 colonies in the old style box hives. For a stipulated fee, we had also agreed to transfer all these bees into our new hives as soon as the season would admit.

To the experienced bee-keeper, the fulfillment of these contracts would have been an enjoyable season's work, but with the exception of a few primitive hints by a bee-keeping friend, we knew nothing about bees, had never seen the inside of a hive filled with bees and depended wholly upon our prospective experience for our bee education. Although we had a little inkling that bees could be managed with smoke, the existence of a bee-smoker made especially for this purpose, was unknown to us, and when we started on our transferring expedition, we expected that a couple of little briar-pipes would furnish us this quieting medium. We were sadly mistaken. Before we had transferred many colonies, we had found by sorrowful experience, that smoking to excess, as was necessary to keep bees under control, was not the most enjoyable part of our new venture; it made us deathly sick. The only way to remain master of the situation was to use a little strategy. We would sly up to a hive, close its flyholes and other existing openings with rags, grass or anything handy, set the hive on the ground bottomside up, and before the bees had time to realize what had happened, would cover the opening with our driving box. This driving box was provided with a rim two or three inches wide, and fitted any common box hive in use.

When this stage of the operation was reached without mishap, we generally had the control. After drumming against the hive ten or fifteen minutes, or until the bees had filled themselves with honey and had entered the driving box, we would place the latter on the old stand to catch the flying bees, and carry the hive a little to one side, generally in the shade of some trees after which the remaining part of the job would be fair sailing.

All in all, our season's work proved satisfactory beyond our expectations, and with the exception of a few incidents of an amusing nature, nothing of great importance transpired. But the details of some of these little happenings were so impressive, that even now, after thirty-six years have passed, I can recall them as vividly as yesterday's transactions.

One of our customers, living in the suburbs of our village, owned a row of some 18 or 20 colonies, as nearly as I can recollect, which occupied a long continuous platform near to and facing his neighbor's fence. The hives were placed close, with hardly room enough between to allow removing one without touching another. The bees were, as all the rest in this locality, of the common black German strain, and this particular lot proved to be, as we afterward had occasion to observe the most ferocious fighters we had ever encountered.

We began the job early in the morning, before many of the bees were flying, and by the application of our usual tactics succeeded quite well in transferring the first two or three swarms. But with the rising sun, bees grew livelier. The disturbance at the bench, careful as we tried to be, was felt all along the line, and soon some of the more inquisitive occupants of the hives were buzzing around our heads. It wasn't very long before—bing—one had objected in a very impressive way to our invasion; pretty soon another followed suit, and still another left its mark, and in less time than it takes to tell it they were giving it to us right and left. Even shirt sleeves and pantaloons were of no account, and they seemed to find sensitive places almost anywhere. To remain there would have been premeditated suicide, and an unconditional flight, that landed us behind the closed doors of a nearby shop, was our only salvation. Although this place of refuge was a grimy dirty blacksmith shop it seemed to be the most comfortable place on earth, for everytime we opened the door to ascertain the prospects, a few sharp reminders from watching sentinels would convince us that they still held the fort.

For a time terror reigned supreme. The owner of the bees, who had been with us during our early manipulations, admiring our skill and heroism, had sought shelter in his woodshed long before the real fun commenced. Neighbors, too, who had come to the fence to witness the great feat of transferring bees from one hive to another, had found it advisable to take an unceremonious departure at an early stage of the fracas, and even cats and dogs had to fly for the cat-hole.

Just as we were meditating on the probabilities of a life sentence, deliv-

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erance in the shape of a tremendous cloud of smoke appeared from the direction of the woodshed door. The proprietor of the ranch, taking pity on our helpless condition, had put some live coals into a large tin pan and onto these a quantity of woodpile accumulations, which sent up a column of smoke that compared favorably to the puffings of an express locomotive. Holding this pan in front of himself, it had a magical effect on the bees. They did not offer to molest him on his way to the shop, and when he opened the shop door in a triumphant way, he said: "There, take this pan and blow the smoke against the hives, that will fix the devils."

Our friends' advice proved literally true. After allowing the infuriated bees a reasonable time to quiet a little, and replenishing the smoke producing pan with a liberal supply of fuel from the woodpile, we were enabled to resume our work. In due time we finished the job with no trouble to speak of.

Only a short time ago a bee-keeping friend, to whom I related the incident, remarked, after we had a good laugh over it: "Why don't you write it up for the bee-paper?" And here it is.

A little later another of our customers had a similar surprise in store for us. On a previous visit we had discussed the benefits and advantages derived from the use of a properly constructed bee-smoker. Being somewhat of an inventive genius, he had fastened over the valve of a common hand-bellows, such as were used in those days with the old-fashioned charcoal flat irons, a tin can with perforated top and bottom. This latter he filled partly with rotten wood and finished with live coals from the stove. In opening the bellows the suction would draw the smoke inside and closing it would send the smoke out of the nozzle. With the exception of the disadvantage that it required both hands to work it, our friend's contrivance would have been quite a formidable bee-smoker, if moderately used. But when we called there at this time, he was so enthusiastic over his invention and so eager to demonstrate its efficiency that he not only blew the poor bees of an opened hive off the frames and over the edge of the hive, but half way across the yard.

LaSalle, N. Y.

[Similar troubles to friend Greiner's have been the lot of many of the older bee-keepers. The ancient smoker which he describes was the only kind used anywhere until 1873, when Moses Quinby made the first bellows smoker that could be used with only one hand. Very few of our younger men can have an idea of the difficulties encountered by the older heads before the advent of practical bee-smokers and of comb foundation. We have often blown smoke upon the bees until we were dizzy with the work.

Friend Greiner's articles bear the stamp of experience, and are always welcome.—EDITOR.]

DR. MILLER'S ANSWERS

Send Questions either to the office of the American Bee Journal or direct to
DR. C. C. MILLER, MARENGO, ILL.
He does NOT answer bee-keeping questions by mail.

Queen-Excluders—Requeening

1. Will bees store as much honey by using a honey-board in an 8-frame hive? I have trouble by the queen going into the upper story.

2. What kind of a honey-board would you recommend?

3. Would it be necessary to use a honey-board on a 10-frame dovetailed hive?

4. We have a spring and fall honey-flow here. The queens quit laying before the fall flow, and do not begin in time to rear enough young bees to winter. Would requeening help this?

5. Would it be best to requeen twice a year; also what time of the year?

6. Please give me the address of a golden Italian queen-breeder that would be adapted for this part of Indiana, and who has no disease in his apiary?

7. Does any queen-breeder ensure his queens free from disease; if so, in what way? INDIANA.

ANSWERS.—1. I suppose you have reference to a queen-excluder. You will probably not be able to see any difference in the amount stored with or without an excluder if indeed there is any difference at all.

2. There is probably nothing better than the wood-zinc excluder. But if you are working for section honey you will find it not worth while to use an excluder, provided you use full sheets of foundation in sections. If you use small starters of foundation it will be better to use an excluder.

3. In this respect there is little difference between an 8-frame and a 10-frame hive, although the queen will probably be more inclined to enter the super over the smaller hive.

4. I wonder now whether you are not theorizing just a bit. If there is a fall flow enough to be called a flow, or enough for the bees to store any surplus from it, it's about a sure thing that it will start the queen to laying, so as to secure a crop of young bees for winter. Yes, it is easier to start a young queen to laying than an old one.

5. I never knew of any one who thought it paid to requeen twice a year.

6. You will find addresses of queen-breeders in the advertising columns but I don't suppose one would be more adapted than another for any particular part of any State.

7. I'm not sure whether any one says so in so many words, but practically every queen is so ensured, for no honest man would send out disease with a queen and say nothing about it. And yet I suppose it might happen that disease would be thus carried sometimes without the sender being aware of it. The present tendency to make queen-candy with boiled honey, or with no honey at all, tends toward safeguarding against disease.

CHARLES CHANDLER AND PART OF HIS 100-COLONY APIARY AT EMPORIA, KAN.

Bees on the Hill or in the Valley

I have 7 colonies of bees located in a valley, and a neighbor bee-keeper has his bees on a high hill, perhaps 175 feet higher than mine. He says my bees have the advantage of his, as my bees go up hill empty and down hill loaded, while with his it is just the other way.

That is all right, and true as long as my bees go west or north, but when they go east they would have to go up first and then down on the other side, and I notice that they don't go very far that way. Now if I would place my bees on top of this hill I think they would go farther south and east than they do now. Most of the basswood is on the hillside, but the best clover is in the lowlands. Do you think it would pay to move my bees higher up for this reason? IOWA.

ANSWER.—It surely must be easier for a bee or anybody else to carry a load down hill than up. In actual practice I have some doubt whether the difference is enough so that a colony in the lower location would show a distinctly larger yield than one higher up. But the matter of distance may be a much more important factor. Within a distance of perhaps a mile and a half it is doubtful that distance counts for much. Be-

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yond that—possibly I should say beyond two miles—distance counts for a good deal, and if your source of supply is beyond that there would no doubt be a gain to move the bees accordingly.

Splints—Enropean Foul Brood

1. Are those splints used by Dr. Miller for foundation supports manufactured by some concern; if so, where can I get them?

2. If caging a queen for a certain length of time, in case of European foul brood, stops the disease, should the disease not come to an end in fall, as all brood-rearing stops entirely for several months?

If an apiary has foul brood one season, will it be free from it next year? There are no young diseased larvæ from which the nurse bees can suck the juice and feed it to healthy ones the next spring. INDIANA.

ANSWERS.—1. The A. I. Root Company make them, and I think also the G. B. Lewis Company—possibly others.

A. L. Beaudin, of St. Chrysostome, Canada, with photograph of bee-journals and bee-books: his home and apiary, and a feeder of his own invention.

2. The shortest answer to your question would be to say I don't know. And that's the truth. I don't know why caging a queen should stop the disease. If caging a queen stops the disease, I don't know why the winter's rest from brood-rearing does not stop it. But here is the important fact that I do know. I know that in a large number of cases cessation of brood-rearing for a week or so has stopped the disease. Note that I don't say in all cases, but in the large majority of cases. I don't *know* that in the great majority of cases the disease is conveyed from one cell to another by the nurse-bees sucking the juices of recently diseased larvæ. That's only a theory, but it is a pretty satisfactory theory until a better theory is advanced.

I think, however, that no one has advanced the theory that the disease is in all cases conveyed by means of larvæ that have been dead only a short time. It may in some cases be conveyed through spores in dried-up scales of larvæ that have been dead a long time. But I suppose these last cases are exceptional. Now, although I don't know all about it, if you will allow me to theorize, I'll tell you what I think is possible in the case you mention. In early spring or winter, when brood-rearing begins, there are no diseased larvæ present. But there are dried scales containing spores. One would expect that the disease would begin rather slowly from these. And observation confirms that supposition. In a colony which has not been badly diseased in the previous year, the first examination in the following spring shows very little disease—possibly none. Subsequent examinations will show it on the increase, although if I am not mistaken there are some cases in which a colony will remain healthy which has been slightly diseased the previous year. If a colony has been very badly diseased this year, next year you may look for it to start in at the very start with plenty of diseased larvæ, probably because of the millions of spores that are present.

Now, if there is anything that still puzzles you, if you will tell me what it is I'll help with an explanation—if I can.

8-Frame vs. 10-Frame Hives—Special Locality

1. In a locality where there is a very small fall honey flow, but enough in the spring for them to begin storing a surplus by March 1, which is kept up until the last of June, do you think the 8 or 10 frame hive would be better? They are managed for comb honey.

2. In such a case do you think 8-frame colonies would store surplus sooner, and if so do you think the 10-frame colonies would catch up later on? CALIFORNIA.

ANSWERS.—1. I would chance the larger hive.

2. On the face of it, it might seem that the 8-frame hive would have its brood-chamber filled sooner, and so surplus would sooner be stored. In actual practice you will be likely to find out that it doesn't pan out that way. A good way will be for you to try both kinds side by side; or if you have 10-frame hives you could reduce some of them to 8-frames by the use of dummies.

Requeening Early in the Season

I have lately bought 16 colonies of black bees. They went into the cellar on Dec. 12 strong in bees and plenty of good, sealed stores. They are in fine condition at this date, but as the hives are of all sizes and shapes, good for nothing but kindling wood, I shall transfer to my dovetailed hives.

Do you think it would pay me to requeen them with good Italian stock early in the season? WISCONSIN.

ANSWER.—Requeening early in the season is sure to interfere at least a little with the building up of a colony, with the possibility of interfering a great deal in case there is some hitch in introducing. If your are requeening for the sake of having better stock to breed from, it may pay to do so early, even if it interferes greatly with the honey crop. But in your case you hardly want to interfere with the crop of this season. So, perhaps you will do just as well to leave the old queens until after swarming, at least, if not until near the close of harvest.

Bee-Bread in Honey

1. Can you see bee-bread in extracted honey?

2. How does it act when melted?

3. What makes honey form a yeast-like top when heated? I have had some honey do this. Is it bee-bread? I am told it is. CALIFORNIA.

ANSWERS.—1. Ordinarily, no. That is, you cannot see it with the naked eye, although in all honey, comb or extracted, I suppose some pollen can be seen, if a proper magnifying glass be used.

2. I don't think you can melt bee-bread.

3. I suppose it is effervescence, occurring more readily the thinner the honey is, and pollen may help in the process.

Bees in Box-Hives—No Honey Nor Swarms

1. I have a nice lot of bees, but they are all in the old-fashioned box gums. During the honey harvest I raise them ½ inch all around. Then I let them down in the fall and daub them up, only leaving room for a few bees to pass at a time. I fear that they do not get enough air. Do you think I could make an opening on the opposite side and give them plenty of air?

2. One colony keeps carrying out dead bees. What is the cause of this? Is it because they don't get air enough? or do they die of old age? I love my bees, and have had good luck with them. I have not lost a colony in seven years. I am afraid I will lose two this winter.

3. What is the reason my bees do not swarm? I have not had any swarms in four years. They are always rich and very strong in the early spring. I am going to buy some up-to-date hives this winter for next spring, so I can increase them. I will make them swarm. WEST VIRGINIA.

ANSWERS.—1 It is not easy to say whether your bees have enough air or not. You say you let down the hives in the fall and then daub them up (the entrances I suppose), and "only leave room for a few bees to pass at a time." The question is whether that "few bees" means 3 bees, 20 bees, or more. I would rather suppose it to mean not more than half a dozen bees, and that might mean an entrance of not more than half a square inch. I should say that was quite too small an entrance. But you say you have not lost a colony in seven years; and with such success it can hardly be that the entrance is so small. At any rate, so long as you winter perfectly it would hardly seem the entrance can be much at fault. But if the entrance is less than the equivalent of about 2 square inches, it will be easy to increase the amount of air by making a hole as you suggest at the bottom of the hive at the opposite side, although the usual way would be to make the entrance at the front larger.

2. It is not likely that lack of air makes the bees carry out their dead. A good many bees will be dying off all the time from old age, especially will this appear more prominent if breeding stopped early.

3. I don't know why your bees don't swarm. Most bee-keepers would be de-

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lighted to have as little swarming as possible. There is a difference in the bees themselves as to swarming, and it may be that you are so fortunate as to have a strain of bees little inclined to swarming. It may be that your hives are such as to allow the queens great abundance of room, in which case there would be little swarming. There may be some other reason that I don't know.

Bee-Keeping in Newfoundland

I wish to try bee-keeping here, and would like to know what kind of bees would be most suitable for this climate. At present there are none in Newfoundland (save the wild bumble-bees). We have plenty of sunny, hot weather in summer, when they would do all right, but our winters are rather long. Still, I believe I could manage them all right, as I can house them during the winter. NEWFOUNDLAND.

ANSWER.—I wonder if you may not be mistaken about there being no bee-hives in Newfoundland. I don't know anything about it, only it would be very strange if no one had introduced them before this. Anyway you are to be congratulated if there are none near you, even if they may be farther away. As there are none within a few miles you will be able to keep pure stock, at least for a time. You can hardly go amiss to get Italians, preferably the leather-colored, as the darker ones are called.

Bees are kept successfully in colder climes than yours. The severe winters ought to cut no figure, for cellaring offers the way out.

It is to be hoped we shall hear from you after you get started.

A Winter and Summer Bee-House

I have in a convenient place a house 5 feet wide by 12 feet long. I can put a hive at each end, two on one long side, and one on the other long side (5 hives in all), leaving room for a door on the side where I put only one hive. I would put the alighting board on the outside for each hive, and cut a notch something like ½x10 inches for each entrance. How would they do in the summer? Would they gather as much honey as they would placed on separate stands? What has been your experience in bee-houses *vs.* placing hives on separate stands? KENTUCKY.

ANSWER.—I have had no personal experience with houses such as you propose. Years ago there was much said in their favor, and quite a number were in use. The greater number of those who had them, however, gradually gave them up, if I am not mistaken, although a few still think well of them. On the face of it, it looks as if it should be just the thing for winter, but I think the general verdict was against such houses for wintering. For summer there is the objection that the bees are not so promptly induced to fly out as they are where there is a better chance for the sun's rays to enter the hives. Yet in actual practice you will not find much difference.

Old and Young Worker-Bees as Drone-Layers

Do old bees become drone-layers, or do only the younger ones "go astray?" NEW JERSEY.

ANSWER.—I don't know. But I have a strong impression it's only the younger ones. Some have advanced the theory that laying workers, in their larval existence, have been located near queen-cells, and so have been fed some of the royal jelly as a sort of overflow. If that were the true theory, of course there would be no drone-layers except those which started in at the business early in life. But I wouldn't take much stock in that theory. Nurse-bees are not so careless as to slop around the soup-dishes in that sort of style. Besides, if that theory were correct, laying workers would be just as likely to appear at all times after young queens are reared, whereas we know that with most races of bees no laying workers are reared unless a colony has been hopelessly queenless for some time. I don't remember that I ever saw any other explanation given, but if you can't find anything better I'll offer one of my own for what it is worth. It is that when a lot of nurses are loaded up with pap, and only a few larvæ are left unsealed, these few are fed so heavily that they are developed sufficiently to do something in the egg-laying line. If any reliance can be put upon this theory it is still true that no bee could start in as a laying worker after it becomes old.

Moving Bees by Wagon and Rail—Spreading Brood—Spring Work

I contemplate moving soon, and wish some advise about preparing my bees for the trip. Will have 40 miles of very rough mountain road, then on the train for 50 miles. Bees in modern hives and light in stores.

1. Will I need any packing over and under the frames to keep them solid enough?

2. Will they need more ventilation than the usual entrance?

3. How can one tell when bees need additional ventilation when in transit?

4. I wish to rear queens as soon as practicable in the spring. How can I tell when the proper time comes?

5. How warm should it be by the thermometer when it is safe to handle brood in ordinary manipulation?

6. What are the indications when it is safe and profitable to spread the brood, *i. e.*, place an empty comb in the center?

7. When a 10-frame hive is full of brood, and the harvest 30 days off, is it best to add another brood-chamber above or strengthen the weak colonies?

8. How about it if the harvest is just at hand?

9. How can a person who has contracted the "bee-fever" expect to come out alive if he does not get a good bee journal?

Your answers to questions have helped me wonderfully. KENTUCKY,

ANSWERS.—1. That depends. If you have self-spacing frames, they ought to travel safely just as they are. If they are loose-hanging frames, they must be secured in some way so they will not shake around. One way is to thrust down at each end of the hive, between each two frames, a small stick with a small wire-nail driven in at one end, so that the stick shall not sink down into the hive. But no sort of packing is needed either over or under the frames.

2. Again, that depends. It depends upon what the "usual entrance" is, and what the temperature is. If your entrances are like mine, 2x12 inches, no further ventilation will be needed unless it be quite warm, say something like 70 degrees. But if your entrances, like many entrances, are only ⅜-inch deep, then you should give extra ventilation unless the temperature be less than 50 degrees, and even at that there might be some danger. The larger the entrance the less need for extra ventilation.

3. Not so easy to say. They will be very noisy, but they'll be noisy anyhow when being jolted over rough roads. When suffering for want of ventilation, they may become so heated that you will easily recognize the increased heat by holding your hand at the entrance or any other point where air may escape. But it is rather dangerous to let them be heated up to that degree. The safe way is to give them a good showering with water whenever you are at all suspicious they are too warm.

4. Not until about the time the most advanced colonies begin to start cells of their own accord. Or, to take it on another basis, not until bees are gathering enough so as to begin building comb. You can begin a good deal sooner than either of those times, but your queens will not be worth rearing.

5. About 70 degrees. Instead of going by the thermometer, it may be better to say, don't handle bees any time when bees are not flying freely. But if you merely lift out a frame and quickly return it, as when you want to know in the spring whether brood is present, then it may be safe at 55 degrees or less.

6. For some years I have been of the opinion that for me there is *no* time when it is profitable to spread brood. Early in the season, at the time when we want bees to build up as fast as possible, the bees of their own accord have all the brood they can cover. In that case, if brood is spread it can result only in chilled brood, thus hindering instead of helping the building up. I don't know whether the bees of others are different or not. If at any time your bees are covering combs that have no brood or eggs at the outer part of the cluster, it ought then to be safe and profitable to spread. But be sure you're right before you go ahead.

7. Strengthen the weak colonies. Perhaps not all of them, but as many as you can make strong enough for the harvest.

8. I don't know. Perhaps in that case it may be as well to do neither, for generally with the beginning of harvest there is no further spreading of the brood-nest, and the supers will give all the extra room needed.

9. I don't know.

Queens Produced by West's Cell Protectors and Cages—Difference in Weight of Honey Sections

1. Some one has said that queens developing from cells given to colonies by means of West's cell protector or queen cages do not do well. In 1912 I used this method considerably, and it seems to be the case as asserted. What is your opinion as to this? It looks a little to me as though such colonies fill up the brood-chamber well, but do nothing in the supers. In the two cases that I tried West's protector, the colonies reared their queen from those queen-cells. The colonies appeared so quiet as to suggest their dying off from queenlessness; but when looking the colonies over preparatory for wintering (outside), queens were found, and the brood-chamber well stocked with honey.

I made it quite a practice, in looking for surplus queen-cells, to put the best looking ones in the West protector and introducing the latter with cells. I have a little stand for keeping the cells in the protector in an upright position. I have gotten to be prejudiced against the "protectors."

2. It rather displeases me that my sections of honey (1912), while *looking well*, averaged in weight only 13 ounces, while about all the others I weighed in this neighborhood weighed at least 14 ounces, and sometimes more.

Are there any reasons evident for such discrepancy? In 1912 I had five times as much honey than in 1911. PENNSYLVANIA.

ANSWERS.—1. Some European authorities claim that the inmates of the cells receive a benefit from the close contact of the bodies of the bees, which benefit is lost when cells are in nurseries or cages. The Stanley nursery ought to be an exception, for in that the bees are allowed free access to the cells. One would naturally suppose that it would be more harm to a cell from long than from short confinement in a cage. Moreover I should expect that the young queen would be hurt as much by an hour's imprisoment immediately after being sealed as it would by a day's imprisonment immediately before emerging from its cell. Indeed, I suspect that the convenience of a nursery may overbalance all the harm of the confinement if a cell be not caged until within a day of the hatching of the virgin. At any rate, I have had some excellent queens after such confinement. But I should expect a poor queen from a cell caged immediately after being sealed.

2. You will probably find that in flush years, when honey comes in rapidly, combs will be filled out more plumply than in a slow flow, perhaps because in a slow flow the bees have more time to build wax and seal combs. You will also find that they will fill combs more plumply if crowded for room. Like enough you gave the bees more surplus room than your neighbors did. Taking one year with another, you are probably the gainer by it.

REPORTS AND EXPERIENCES

Good Results Last Year

I did very well last year. With 14 colonies I increased to 19, and took off 610 pounds of honey, leaving over a super on each hive, as I came near losing many by starvation last spring. W. ULMER MOORE.

Lott, Tex., Feb. 9.

Bitter Honey

Some 6 or 8 years ago all of our honey was bitter. I noticed at the same time that there was honey-dew on the box-elder trees. By rubbing the leaves of the box-elder on my tongue I noticed the same bitter taste that was in the honey. I saw the bees sucking the leaves of the box-elder. I have not had any bitter honey since.

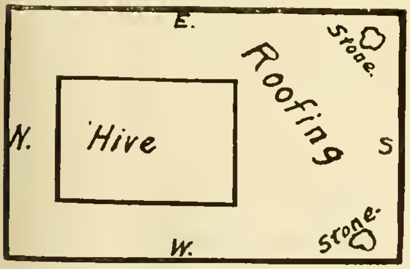
A. M. BROYLES.

Rhea Springs, Tenn., Jan. 10.

Keep Weeds Down Around Hives

To keep weeds down in front of and around hives, I find nothing more satisfactory than common roofing felt ("rubber roofing," as it is sometimes called). Cut in 4-foot lengths (or longer, if desired), place upon the ground, long way north and south, putting the hive in the center near the north end. It will keep the weeds down, make it easy to see the clipped queen at swarming time, keep the hives off the ground, and lasts for years. Try this where cinders are not easily obtained. Stones at the southwest and southeast corners will keep it from being blown up. GEORGE F. WEBSTER.

Sioux Falls, S. Dak.



Missouri a Leading Honey State

According to the last census report, Missouri has 40,110 persons keeping bees in the State, but as no statistics were taken in cities and towns, we should think the figures should be 45,000 at the least; the number of colonies were given as 203,569. The honey gathered in one year would probably be something over 6,000,000 pounds, valued at about $800,000, and taking that with the value of the bees, it would amount to about $1,500,000.

According to the report, there is about one in twenty farmers who keep bees. Missouri is ranked second in the number of colonies, but fourth in the amount of honey obtained. As some of the other States have large numbers of up-to-date bee-keepers, and as Missouri has so many farmers keeping bees that do not use modern methods, we think that our State makes a most remarkable record, and shows that it is adapted to bee-keeping. We have some extensive bee-keepers in the State, but the most of the bees are kept in small numbers in a yard, throughout the State. Texas is rated as first in bee-keeping, but as Texas is about four times as large as Missouri, we think our State makes the best record comparatively.

By the way, we wish to speak of what is really a text-book on bee-keeping, sent to us from Texas by Louis H. Scholl. It surely fills the bill so far as we have had time to examine it, and the State of Texas is to be congratulated in having this fine work, and I am sure many of the other States would do well to follow Texas in her example. We have before us a bulletin issued by our own State in 1905, which doubtless has done much good for bee-keeping

We now have a bill introduced into the House of our Legislature, asking for some changes in our foul brood law. We hope to get it into a law, as it is much needed in our State, and if we can get the law we hope to better cope with diseases of bees. The appropriation for this work in our State has been too small to pay for what is needed. If the amendment asked for is passed, we hope to have better and more up-to-date bee-keepers in our State than we now have.

Mexico, Mo. J. W. ROUSE.

Bees Wintering Well in Iowa

Bees are in fine condition here, and good prospect for white clover next season. I opened a hive today, packed on the summer stand, and found sealed brood 4 inches across, with a circle of eggs and larvæ more than an inch wide around it. They have quite a quantity of sealed honey in the hive. I look for a strong colony in this hive when fruit blossoms come. J. L. STRONG.

Clarinda, Iowa, Jan. 25.

Managing Weak Colonies

Last spring I had some weak colonies. What was I to do with them? I got my Bee Journal and found out how to manage weak colonies. Last summer I obtained 1505 pounds from 37 colonies; in 1909 I obtained 3500 pounds. This year I sold my crop for 17 cents per pound. I have an order filed here in my office for 3000 pounds at 17 cents, but I can not fill it.

Not any kind of honey sells under 10 cents here. I produce bulk comb honey, or chunk honey as you please to call it.

I certainly do enjoy reading the different opinions of my brother bee-keepers on the kind of honey to produce for the most profit.

Galax, Va., Dec. 26, 1912. G. F. JONES.

Wintering—Producing the Crop—Tin Separators

I wintered 25 colonies, increased them to 37, and produced 400 pounds of Spanish-needle honey. The weakest colonies I winter in a concrete cellar under my dwelling house. The temperature is from 45 to 52 degrees. I never lost any in the cellar. The strong ones I winter out-of-doors, with shavings on top, and a telescope hood olaced over them. Last winter was very cold, and below zero quite often. I lost one-third of those I had out-of-doors.

Before swarming I confine the queen under an excluder with one frame of brood, and the rest drawn-out combs. The rest of the brood in the upper story, and on this supers are used. I extract the honey in the fall at the end of the crop.

With a double brood-chamber I found after the harvest that the upper story had the most honey, and the lower story with the queen and brood had not stores enough to carry them through the winter. I have exchanged frames, but that is a mean job, for as a rule bees are generally cross when bothered after the harvest. I am thinking of exchanging stories after the young bees are all hatched. Can any experienced bee-keeper give light on this question?

I rear all of my queens. I fix up my supers with starters in the winter. I use tin separators the full height of the section-holders. They are more expensive than wooden ones, but in the loug run they are the cheapest. To clean them, I put an old wash-boiler on the stove, throw them all in, and let them cook thoroughly, then let them remain until the water is cold. The wax comes to the top. WM. SASS.

Concordia, Mo., Jan. 29.

Knife and Journal Pleases

I am very well pleased with the bee-keepers' knife you sent me some time ago. It seems to me the American Bee Journal is getting better right along. I could not do without it.

In the last number of this Journal I mentioned a crop of 3200 pounds of honey from 52 colonies. A misprint caused me to say 200 pounds from my bees in 1912.

G. A. BARBISCH.

La Crescent, Minn., Feb. 11.

Caucasian Bees All Right

The Caucasian bees are all right in my estimation. They are good, early brood-rearers. I had swarms May 8. They seal their

IRA WALTON AND A PORTION OF HIS CAUCASIAN APIARY.

honey evenly and snow-white, and will work when other bees do nothing. But as to their gentleness I do not find them as gentle as some claim. I am satisfied they are a good all-around bee. Ira Walton.
Gotham, Wis., Jan. 8.

Finding Bee-Trees

The front cover picture of this Journal shows part of the tree cut away, the swarm exposed to view, and me hunting for the queen. After removing 30 pounds of honey and three frames of brood which they had built in two months, I brushed the bees into the hive, used smoke on them while doing this.

The best way to find bee-trees is to follow up little streams or creeks in the woods during the dry season. If there are any bees around, you are sure to find their watering place. When you have found it, watch where they go. If they fly low down they are not far, but when they go high up in a circle their home is quite a distance. Watch several bees to be sure you get the right line, and then look at every tree as you go, low and high, and you will soon find them.

B. F. Schmidt Cutting a Bee-Tree.
This swarm was followed from his yard in June, 1912 and recovered 2 months later.

Another way to locate bee-trees is to set a bait of thinned honey on a stump or rock, and near it burn some old combs to attract the bees. If there are any bees around they will find the bait in an hour, and you can watch the direction of their flight easily.

The month of October, or during a dry season, is the best time to hunt bees with bait, as at that time there are usually but few if any flowers for the bees to work on.
B. F. Schmidt.
N. Buena Vista, Iowa, Oct. 12, 1912.

Crop Below the Average

Our bees for the first time in 10 years did not come up to the average. I took some 3500 pounds from 29 colonies—all comb honey. The honey season closed about Aug. 25, and after that no more honey was gathered. All through September it snowed and rained.
J. D. Kaufman.
Kalispell, Mont., Jan. 28.

The Bee Journal a Great Help

The Bee Journal has been a great help to me, and I shall recommend it to all bee-keepers. Henry G. Schuchert.
Elgin, Ill.

Apiary Destroyed by Fire

The day after Christmas a fire started some 3 miles from my old home in San Diego county. With an eastern gale it ran over three ranges of mountains, finding one of my best apiaries, where it burned the honey house and 43 colonies of bees. It has badly injured or destroyed our bee-range. Under the circumstances we have sold some 500 colonies and partly gone out of the bee-business for a while until the sages, etc., grow again

Everything was dry as tinder, for they had no rain until three or four days ago.

The greatest cold I have known since I left the East in 1875, has covered California and hit the oranges and lemons very hard, probably ruined half of the crop. Orange and lemon growers smudged every night for over a week. They took 75 to 100 carloads of oil out every day and made solid clouds of smoke, and yet lost.
Maj. Geo. F. Merriam.
Los Angeles, Calif.

A Tall Bee-Tree

Is this the tallest bee-tree? T. F. Strain, of Tacoma, Wash., told me he cut a large tree in 1879, to clear the ground. He did not know it was a bee-tree It was 350 feet high, and was 8 feet across the stump. After being sawed off, the tree stood for two weeks before it fell, as the wind had to blow before he expected it to fall. It fell late in the afternoon, and at supper time a bee was seen on the window, the first they had ever seen in that country. L. W. Benson.
Galena, Kan.

California Prospects

To date this has been the driest season known in southern California for many years. Since July 1 but 1.66 inches of rain has fallen, and dry winds have absorbed the moisture, so that our hills are as brown as in mid-summer Last week a freeze destroyed millions of dollars worth of citrus fruits, young trees and vegetables. Prospects for the apiarist are not encouraging.
Eugene Baker.
Los Angeles, Calif., Jan. 14.

Advantages of Redwood Lumber

I am a builder by trade, and have used many thousand feet of redwood lumber, and my experience is that it is far superior to pine in a great many ways. Most of the material that is exposed to the weather in the buildings of wood in California is redwood, with the rough side exposed to the weather. Whle it may not look quite so nice to an easterner, it is all the go here.

First, the rough side does not attract the sun's rays near so much as does a surfaced board, which will help to keep the board from warping, and also help to keep a cool hive.

Second, paint will last more than twice as long, and will not peel, blister nor crack.
Puente, Calif., Jan. 10. H. M. Hess.

Good Crop in Illinois

The bees worked good, and there was considerable swarming the past year. My son started an apiary and had fine success for a beginner. Our best colony produced 214 pounds of extracted honey. The strong colonies produced five supers.
Chicago, Ill., Jan. 19. Tim O'Donnell.

Fine Prospects in Vermont

Bees are having an open winter here. We have had but 2 inches of snow to date. I expect to see the bees winter the best they have in years. We are looking for a big yield. I never saw clover look better than it did last fall. My average was 49 pounds per colony, but I had to feed some in the fall. M. C. Young.
Rutland. Vt., Jan. 30.

Mild Winter in France

The year 1912 will count among the poorest for bee-culture in France, and especially in Brittany, where the winter losses were great, owing to short stores.

We are having a very mild winter. On Jan. 6 I saw bees bringing in pollen gathered on furze blossoms. The hazel is in bloom. I also saw yesterday some swelling buds of pear blossoms. Etienne Giraud.
Le Landreau, France, Jan. 15.

[The above locality is in Eastern France, near the River Loire, at the 47th degree of latitude.—Editor.]

Bees in South Dakota

I was in southeastern South Dakota three weeks last September. They are getting lots of bees up there. It is going to make a a good bee-country, lots of hearts-ease, white clover and alfalfa.

The bees here were in fine condition for winter, and they had a fine flight on Christmas day. I. N. Arnold.
Kalona, Iowa, Jan. 8.

Classified Department

[Advertisements in this department will be inserted at 15 cents per line, with no discounts of any kind. Notices here cannot be less than two lines. If wanted in this department, you must say so when ordering.

BEES AND QUEENS.

Nutmeg Italian Queens, leather color. After June 1, $1.00. A W. Yates,
Hartford, Conn.

Golden Queens that produce 5 and 6 band bees. Untested, $1.00; Tested, $3.00.
1A9t Robert Inghram, Sycamore, Pa.

Bees and Queens from my New Jersey apiary. J. H. M. Cook,
1Atf 70 Cortland St., New York City.

Improved golden-yellow Italian queens for 1913; beautiful, hustling, gentle workers Send for price list. E. E. Lawrence,
1A8t Doniphan, Mo.

Place Your Order Now for early delivery. Untested Queens, one for $1.00; 6 for $5.40. Tested Queens, one for $1.50; 6 for $8.40. Write for prices of Nuclei and full colonies.
W. J. Littlefield, Little Rock, Ark.

How About those beautiful untested three-band Italian queens for 1913? We have them and know how to rear them; 30 years' experience. We rear queens that make bees that gather us heavy crops of honey, and we will send you the same kind at 75c each; $4.25 for 6; $8.00 per dozen. Safe arrival and satisfaction always guaranteed.
Rialto Honey Co., Rialto, California.

Italian Queens Only—Untested, $1.00; sel. tested, $1.50 Bees by pound and half-pound, Plans, "How to Introduce Queens," 15c; "How to Increase," 15c; or both 25c Descriptive list free. 3A2t
E. E. Mott, Glenwood, Mich.

Golden Quebns that produce Golden Workers of the brightest kind. I will challenge the world on my Goldens and their honey-getting qualities. Price, $1.00 each; Tested, $2.00; Breeders, $5.00 and $10.00.
2Atf J. B. Brockwell, Barnetts, Va.

Queens—Improved red-clover Italians, bred for business; June 1 to Nov. 15. Untested queens, 75c; select, $1.00; tested, $1.25 each. Safe arrival and satisfaction guaranteed. 1A1y H. C. Clemons, Boyd, Ky.

Golden and 3-band Italians, also gray Carniolan queens. Tested, $1 00 each; 3 or more 90c each. Untested, 75c each; 3 to 6, 70c each; 6 or more, 65c each. Bees per lb., $1.25; nuclei per frame, $1.50. A discount on orders booked 30 days before shipment. 1Atf
Bankston & Lyon, Buffalo, Leon Co., Tex.

Quirin's famous improved Italian queens, nuclei, colonies, and bees by the pound, ready in May. Our stock is northern-bred and hardy; five yards wintered on summer stands in 1908 and 1909 without a single loss. For prices, send for circular.
Quirin-the-Queen-Breeder, Bellevue, Ohio.

Golden and 3-band Italians, also gray Carniolan queens. Tested, $1.00 each; 3 or more 90c each. Untested, 75c each; 3 to 6, 70c each;

6 or more, 65c each. Bees per lb., $1.25; nuclei per frame, $1.50. A discount on orders booked 30 days before shipment. 3Atf
C. B. Bankston, Buffalo, Leon Co., Tex.

MOORE'S Strain and Golden Italian Queens. Untested, $1.00; six, $5 00; twelve, $9.00. Carniolan, Banat and Caucasian Queens, select, $1 25; six, $6.00; twelve, $10.00. Tested, any kind, $1.50; six, $8.00. Choice breeders, $3.00. Circular free. W. H. Rails, Orange, Calif.

ONE of our customers (J. A. Carnes, M D., Mt. Carmel, Pa) writes: "Your bees are evenly marked; all golden but the tip. They are the most GENTLE bees I ever handled." Untested queens, $1.00 each. Send for wholesale prices. C. W. Phelps & Son,
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WE WILL requeen all our 2000 colonies this spring. We offer the one-year-old-queens removed from these hives at 40 cents each, any quantity. Italian stock, delivered any time before June 1. Untested queens, this year's breeding, 60 cents each; delivery guaranteed. Book orders now.
Spencer Apiaries Co., Nordhoff. Calif.

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WANTED—Comb and extracted honey, and beeswax. Write us. Hildreth & Segelken,
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WANTED—Comb, extracted honey, and beeswax. R. A. Burnett & Co.,
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RASPBERRY-CLOVER HONEY in new 60-lb. cans at 9c. Sample, 5c. 3A1t
J. D. Hull & Bro., Honesdale, Pa.

WANTED—Choice extracted white and amber honey in barrels or cans. Send sample and price delivered f. o. b Preston
8Atf M. V. Facey, Preston, Minn.

FOR SALE.—Water White Alfalfa, Light Amber Alfalfa. Put up in any size packages, any quantity. Write for prices.
11Atf Dadant & Sons, Hamilton, Ill.

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FOR SALE—50 to 300 colonies, 8-frame; good condition. E. F. Atwater, Meridian, Idaho.

FOR SALE—One hundred and twenty-five eight-frame hives, and five hundred supers with extracting frames, mostly unused, to be sold at a bargain. Philip Goode,
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FOR SALE—About one hundred black and hybrid Queens. Will ship any time after March 1st at 40 cts. each, or 12 or more 35 cts. each. D. E. Brothers, Attalla, Ala.

FOR SALE—An ideal bee location, consisting of house, barn, and 40 acres of land. For further particulars, write to 3A1t
J. J. Zimmermann (Administor), Alma, Wis.

FOR SALE—Empty second-hand 60-lb. cans-two cans to the case, good as new, 25 cents per case. C. H. W. Weber & Co.,
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FOR SALE—304 colonies of Italian-hybrid bees at $4.00. Fine location for comb honey. Right of location to purchaser. Please don't write unless you mean business. 3A1t
J. B. Marshall, Big Bend, La.

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INDIAN Runner Ducks, light fawns, also dark penciled, white eggers, $1.00 and up.
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FOR SALE — Buff Orpington eggs, pure bloods: $1.00 for 15. Satisfaction guaranteed.
2A1y W. H. Payne, Hamilton, Illinois.

FOR SALE — White-egg strain Indian Runner Ducks, White Orpingtons, White Wyandottes, Houdans, Bronze Turkeys. Ducks. $1.25 each. A. F. Firestone,
Broadwell, Athens Co., Ohio.

MISCELLANEOUS

WE HAVE THE QUEENS READY NOW, and you can have them by sending us $1.00 for one Untested; $5 40 for 6; $1.50 for one Tested; $8.40 for 6. Write for prices of Nuclei and full colonies. W. J. Littlefield,
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THE PRINCIPAL TROUBLE with honey-production is bad queens. We know you all wish to harvest large crops. The best of untested three band queens. 75c each; $4 25 for 6; $8.00 per dozen. Safe arrival and the Golden Rule to all customers. We know how. No order too small or too large for our prompt attention. We can send them quick
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FOR SALE—Bees, Honey, and Bee-Keepers' Supplies. A. E. Burdick, Sunnyside, Wash.

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BEES WANTED—Could take a Carload of Bees in spring: prefer Langstroth hives, and Italian Bees, but open for others. Give particulars. Address, R. F. Holtermann,
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In spring or in fall most bee-keepers neglect to stimulate brood-rearing—one of the most important things in having strong colonies and good wintering. It does not depend so much upon the amount of feed as it does upon regularity every night unless the weather is too cold, and you will wonder where your strong colonies come from.

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3. It reaches where the bees can get at the feed even in cool weather.
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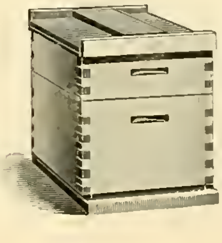

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The well known quality of Root's goods hardly needs mention here. We are not content with making supplies "good enough." They must be just right and a little better than necessary to answer the requirements of our standard. Hives, frames, and sections are uniformly acurately cut and finely finished. From the machine shop to the packing and shipping room every detail is carefully cared for to ensure the entire satisfaction of every customer. Extractors, smokers, honey-knives, veils, gloves, honey-tanks, every thing used in the smallest yard or the largest apiary is here ready for your use. Honey labels, letter heads cards, etc., used by bee keepers made to your order promptly. Special catalog for these on request.

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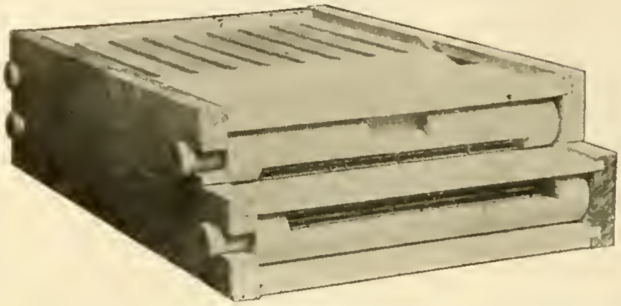

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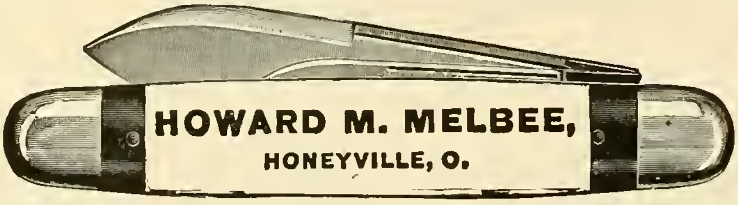

Your Name and Address will be put on one side of the handle as shown in the cut, and on the other side a picture of a Queen-Bee, a Worker-Bee, and a Drone-Bee. The handle is celluloid, and transparent, through which is seen your name. If you lose this Knife it can be returned to you, or it serves to identify you if you happen to be injured fatally, or rendered unconscious. The cut is the exact size; it is made of best steel. When ordering be sure to write exact name and address. Knife delivered within two weeks after we receive order.

Price, postpaid, $1.00; or with a year's subscription to the American Bee Journal—both for $1.80; or given FREE as a premium for sending us 3 New subscriptions at $1.00 each.

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Have been manufactured in our plant at Falconer, N. Y., for nearly forty years, becoming more popular every year, on account of the superiority of workmanship and material put into them to produce the goods. **"Falcon"** supplies are sold all over the world, and universally live up to the **"Falcon"** guarantee of "Satisfaction or money back." If you have not already looked up your wants for this season it would be a good plan to do so now, and let us quote you on your list of requirements. It takes a lot of time to put supplies together, and by purchasing hives and supplies now, it will give you ample time to get them in order before the rush.

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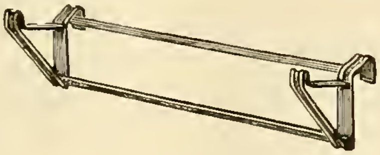
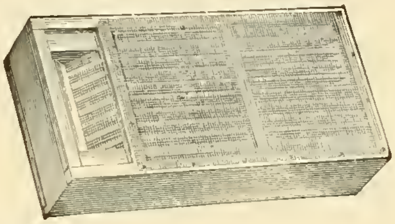
Fits to side of hive for hanging the frames during manipulating. Price, each, 25 cts. Postage east of Mississippi, 9 cts.; postage west of Mississippi, 12 cts.





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Can You Handle Forty Apiaries?

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Say, friend Tyrrell, you have besieged me with letters and cards from the request you made to your readers on page 479. Well, I never saw or heard of such a flood of mail. I never had any idea that you had so many subscribers before, and, too, many of them write the best letters I believe I ever received. Well, it just did me good to look them over, and I wish you could have been here and gone over them with me.

And now I want to thank you for what you said, and I assure you that as soon as possible I will return the favor, not only to you, but your many interesting readers who have written so many good and cheering letters to me. I declare I don't know just how to express myself over the matter, but I must feel something like a great "big hearted" fellow feels at a good old-fashioned hand-shaking at the close of a good meeting, when the good spirit is at its flow.

J. J. WILDER.

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Tested queens in March; untested, after April 1st. About 50 first-class breeding-queens ready at any date.

PRICES: Tested, $1.25; 5 for $5.00; Breeders, each $5.00. Address

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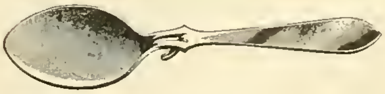

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HONEY AND BEESWAX

CHICAGO, Feb. 17.—Comb honey has sold freely during this month, and stocks have been reduced, and if this demand keeps up during the coming month we are of the opinion that the yield of 1912 will practically be all consumed before that of 1913 is in evidence. We think the excellent quality of honey has been the main factor in the large volume of sales, many retailers saying they have sold more honey this winter than they have for quite a long time, as people will come back for some more of the same kind they had before.

Extracted is moving off steadily and may clean up. Prices on comb has varied, and is lower by 1@2c per pound than it was in September and October, and it is too late in the season now to expect any advance in price unless the crop is actually about exhausted, Beeswax remains steady at from 30@32c per pound according to color and cleanliness. R. A. BURNETT & CO.

NEW YORK, Feb. 15.—The market is practically bare of comb honey of all grades, some few small odd lots are coming in yet, and find ready sale at 14@16c for white, and 11@13c per pound for dark and amber, according to quality and style of package. The market for extracted honey has been very quiet during the past two months, and we do not see any indications for a better demand, as the supply is more than ample to meet the demand. California light amber sage, which was reported to be of very short crop in the beginning of the season was held at high figures, and now it is being offered quite freely with no buyers. West India honey,is arriving very freely with very little demand, and prices are declining right along the line. We quote California sage, light amber, at 7½@8c per pound: California alfalfa at 6@6½c per pound, and West India at 73@75c per gallon.

HILDRETH & SEGELKEN.

LOS ANGELES, Feb. 15.—There is very little business in California honey at present, owing principally to the small stocks on the Coast. These are in the hands of holders who are not forcing sales, and the demand is correspondingly light. We quote the market as firm but quiet: Light amber sage, 6½@6⅝c; water-white alfalfa, 7@7¼c. All f. o. b. Coast with $1.00 freight rate by rail. Light amber sage, 6¾@6⅞c; f. o. b. steamer at San Diego, with 60c rate to New York via Tehuantepec. HAMILTON & MENDERSON.

KANSAS CITY, MO., Feb. 14.—The supply of both comb and extracted honey is large. The demand fair. We look for a better movement from now on. We quote as follows: No. 1 white comb, 24 section cases, $3.10 to $3.25; No. 2, $3.00. No. 1 amber, $3.00; No. 2, $2.50 to $2.75. Extracted, white, per pound, 8@8½c; amber, 7@7½c. Beeswax, per pound, 22@25c.

C. C. CLEMONS PRODUCE CO.

CINCINNATI, Feb. 20.—The market for honey has livened up considerably, and we are selling fancy double decker comb honey at $3.75 to $4.00 a case; fancy extracted honey in 60-lb. cans at 9@10c a pound, and amber extracted honey in barrels at from 6½@8c a pound, according to the quantity and quality purchased. For choice bright yellow beeswax we are paying 30c a pound delivered here, or if taken out in trade we allow 32c.

THE FRED W. MUTH CO.

BOSTON, Feb. 14.—Fancy white comb honey, 16@17 per lb.; No. 1, 15@16c. Fancy white extracted, 10@11c; light amber, 9@10c; amber, 8@9c. Beeswax, 30c. BLAKE,-LEE CO.

INDIANAPOLIS, Feb. 14.—White comb sells at 18c in 10-case lots; No. 1 white, one cent less. Amber comb in slow demand, and at lower figures. Best extracted sells at 11@12c in 5-gallon cans. Comb honey seems to be in excessive demand, and very little is now being offered by producers. Beeswax is in good demand, and producers are being paid 30c per pound. WALTER S. POUDER.

DENVER, Feb. 15.—We quote comb honey in a jobbing way at the following figures: No. 1, $3.05; choice, $2.90; No. 2, $2.70 Extracted honey, white, 9c; light amber, 8c; strained, 6¾@7c. We pay 26c in cash and 28c in trade for clean yellow beeswax delivered here.

THE COLO. HONEY-PRODUCERS ASS'N.
F. Rauchfuss, *Mgr.*

CINCINNATI, Feb. 15.—The demand for comb and extracted honey is light, with a good supply. No. 1 white comb honey sells in large lots at $3.60 per case of 24 sections. There is no demand for off grades. White extracted honey in 60-pound cans is selling from 9½@10c; light amber in barrels 7@7½c; in 60-pound cans, 8@8½c. Beeswax in fair demand sells at $33 per hundred.

The above are our selling prices, not what we are paying. C. H. W. WEBER & CO.

SAN FRANCISCO, Feb. 14.—The demand for comb honey has not been so marked, although plenty has been offered, and the prices are as follows: Fancy No. 1, 15@16c; No. 2, 13½@14½c; dark comb, 11@12c; water-white extracted, 8@8½c; light amber, 7½@8c per pound; amber, 6@7½c; lower grades, 5@6c Beeswax, 27@30c for nice yellow wax, and 23@26c for dark. JOHN C. FROHLIGER.

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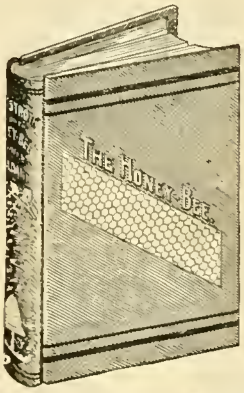
After reading your book carefully I must say it is a spendid work and contains much information that the others leave out, as well as the practical things.
Very cordially,
Frank C. Pellett,
Atlantic, Iowa, Feb. 4, 1913.



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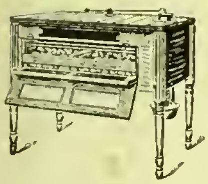

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If you are wanting any special goods, orders ought to be in our hands within the next few days. Other cars will be coming from the factory, and we can save you considerable in transportation charges by having your goods come with ours in the cars.

Our new catalog will be out, probably, before the first of February. If you are not on our mailing list, send us a postal-card request for this catalog, and it will be mailed as soon as they come from the printers. In the mean time you may order from the 1912 catalog. If you haven't one on file, a copy will be mailed immediately on request.

If you want to buy in quantities considerably larger than quoted in the catalog give us a list of your needs and we will quote price accordingly.

If you have never tried Root quality goods, make a beginning this season. You will not be disappointed in results. Our branch is maintained for service in this line, and we can give it to your entire satisfaction.

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The best that money can buy; not inclined to swarm, and as for honey gatherers they have few equals.

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bred in separate yards, ready March 20. Untested, one, $1; six, $5; 12, $9; 25, $17.50; 50, $34; 100, $65. Tested, one, $1.50; six, $8; 12, $15. Breeders of either strain, $5. Nuclei with untested queen, one-frame $2.50; six one-frame, $15; two-frame $3.50; six two-frame $20.40; nuclei with tested queen, one-frame, $3.00; six one-frame, $17.40; two-frame, $4; six two-frame $23.40. Our Queens and Drones are all reared from the best select queens, which should be so with drones as well as queens. No disease of any kind in this country. Safe arrival, satisfaction, and prompt service guaranteed.

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Queens That "Are Better"— Italians & Banats

Untested Queens, 75c each; $8.00 per doz. two or more doz. in one order, $7.50 per doz.
Tested Queens, $1 25 each; $12.00 per dozen.
Breeder Queens, 3.00 each. Foreign trade add 5c each extra.

½ lb Packages of Bees after May 1st, $1.50. Select queen wanted and add to this. The express charges on these will be very small in comparison with charges on frame nuclei

One-frame Nuclei with Untested Queen, $2.00 each; 2-fr., $3.00; 3-fr., $4.00. Full Colony of Bees in 10-frame hive, $7.00 Add 50c if Tested Queen is wanted; $2 00 if Breeder Queen is wanted. For 10 or more Colonies or Nuclei, deduct 25c each. Write if interested in carload lots

I have successfully shipped Bees and Queens from this place every month of the year.

"Two colonies of bees invoiced by you on Jan. 29 to Matsutaro Sarada, Kobe, arrived safely on March 23, and are satisfactory.
March 31, 1912 Masami Yoshimura, Ogaki, Japan"

Each Colony contained a fine Breeding Queen.

My Bee and Queen Exhibits at the State Fair of Texas were awarded six premiums in 1911. Italians were also awarded First Prize at The Cotton Palace, in Waco, Texas.

"YOUR MONEY'S WORTH" is my motto. TERMS are Cash with order. I refer you to Sabinal National Bank or any business firm in Sabinal.

have seven yards, and with several hundred nuclei, I can serve many customers. I solicit your trade.

J. A. Simmons, Uvalde Co. Apiaries, Sabinal, Texas

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Also send us your Old Combs—we will render your wax and save you money.

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We manufacture Millions of **Sections** every year that are as good as the best. The **CHEAPEST** for the Quality; **BEST** for the Price. If you buy them once, you will buy again.

We also manufacture **Hives, Brood-Frames, Section-Holders and Shipping-Cases.**

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107 MAIN STREET

Sandpoint, Idaho

PRATER-MYRICK Co. have been doing business in Real Estate, Renting, Loans, Insurance, etc., in Sandpoint, Idaho, for a number of years past. Mr. Prater has been in this county (Bonner) for nearly 20 years. For honorable, upright and square dealing the firm is well known to all here. Fortunately, I have been able to acquire the interest of Mr. Myrick in the concern, and beginning with March 1, 1913, the firm will be known as "PRATER-YORK Co.," and will continue the same lines of business.

For readers of the old American Bee Journal interested in this part of our great country, we will be glad to answer enquiries, or send our *free* Circular, which gives considerable information that is reliable about this locality.

There is much interest manifetsed by people living in the Eastern and Southeastern parts of the United States in this great and growing Northwest, which is destined to be occupied by many wide-awake people who are looking for a new home, and where opportunities for advancement are greater than in the older and overcrowded parts of our country. Let us hear from you, if you are thinking of making a change. Lots of unoccupied bee-territory in this county.

Honey as a Health-Food

This is the title of a 16-page circular, 3½x6 inches in size, gotten up for selling honey. It contains an article on why honey should be eaten, which gives much valuable information on honey. It also has many recipes for the use of honey, both as a food and as a remedy. It ought to be distributed freely among honey-customers. The prices are as follows:

Sample copy free; 10 copies, postpaid, 25 cents; 50 copies, 90 cts.; 100 copies, $1.50; 250 copies, $3.00; 500 copies, $5.00; 1000 copies, 9.00. Your business card will be printed free on the front page on an order of 100 or more copies.

Special Bee-Literature Offers

Ask for my circular containing special offers of bee-literature. And if you want any bee-papers or other magazines, send me your list and I can quote you a price that will save you some money, I am sure. Address,

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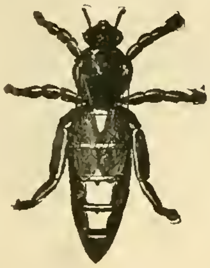
Untested ITALIAN QUEEN-BEES



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6 Queens for $4.50;
3 for $2.75; 1 for $1.00

For a number of years we have been sending out to bee-keepers exceptionally fine Untested Italian Queens, purely mated, and all right in every respected. Here is what a few of those who received our Queens have to say about them.

AMERICAN BEE JOURNAL—
Gentlemen:—Last October I purchased three queens of you for my experiments with different queens, and wish to ask you if queens of this season will be of this stock? One of the Queens is the most remarkable queen I ever owned for prolificness, which she transmits to all her daughters.
Riddle, Oreg., July 4, 1912. L. W. WELLS.

AMERICAN BEE JOURNAL—
Gentlemen:—The queen you sent me came in good condition. She was one of the best I have ever bought. I have her introduced and she is doing business as if to the manor born. I want another of those beautiful queens as soon as I can possibly get it for making up my fair exhibit. Please send a fine one. Such queens certainly advertise your business.
Darlington, Wis., July 31, 1912. C. R. BRIDGMAN.

AMERICAN BEE JOURNAL—
Gentlemen:—I bought a queen of you about 35 years ago, and from her I italianized 1150 colonies of the finest beauties of unusual good qualities. I lived near Milton Center, Ohio, at the time. Yours truly,
Portales, New Mexico, July 10, 1912. J. W. HOUTZ.

We usually begin mailing Queens in May, and continue thereafter on the plan of "first come first served." The price of one of our Untested Queens alone is $1.00, or with the old American Bee Journal for one year, both for $1.60. Three Queens (without Bee Journal) would be $2.75, or six for $4.50. Full instructions for introducing are sent with each Queen, being printed on the underside of the address card on the mailing-cage. You cannot do better than to get one or more of our fine Standard-bred Queens.

AMERICAN BEE JOURNAL, HAMILTON, ILLINOIS

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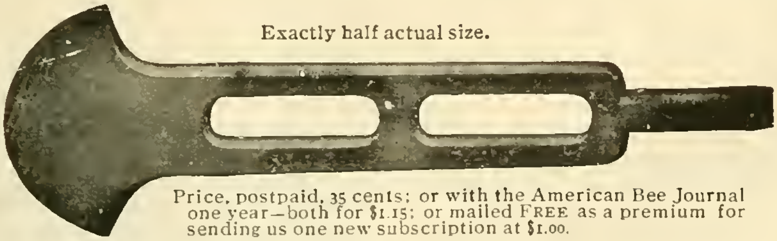
NICKEL PLATED.

Exactly half actual size.



Price, postpaid, 35 cents; or with the American Bee Journal one year—both for $1.15; or mailed FREE as a premium for sending us one new subscription at $1.00.

This is a special tool invented by a Minnesota bee-keeper, adapted for prying up supers, and for general hive and other work around the apiary. Made of malleable iron, 8½ inches long. The middle part is 1 1-16 inches wide, and 7-32 thick. The smaller end is 1⅞ inches long, ½ inch wide, and 7-32 thick, ending like a screwdriver. The larger end is wedge-shaped, having a fairly sharp, semicircular edge, making it almost perfect for prying up hive-covers, supers, etc., as it does not mar the wood. Dr. C. C. Miller, who has used this tool since 1903, says: "I think as much of the tool as ever."

American Bee Journal, Hamilton, Illinois.

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Extra Breeding Queens, $3; Selected, $2; Fertilized, $1.50; lower prices, per doz., 50 or 100 Queens. Safe arrival guaranteed. Write

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Italian Switzerland.

This country, politically, Switzerland Republic, lies geographically in Italy, and possesses the best kind of bees known.

HARTFORD, CONN., April 20, 1907.
Please find enclosed $11 for six queens. I hope to get as good ones as I received before and if I do I shall want more.
A. W. YALES.

NORWICHTOWN, CONN., Sept. 14. 1912.
I send you money order for $3. I wish 2 of your fertilized queens. I have seen some of your bees owned by Mr. Yates atd I like them.
ALLEN LATHAM.

Please mention Am. Bee Journal when writing.

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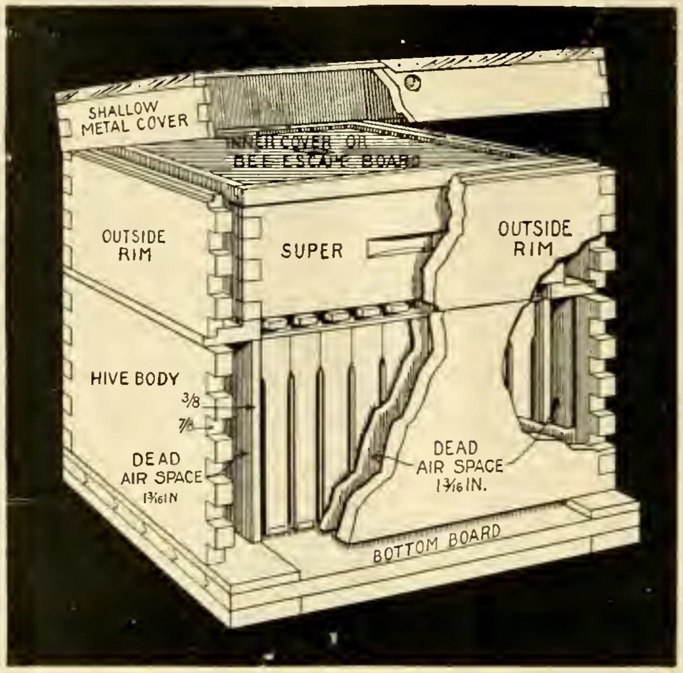

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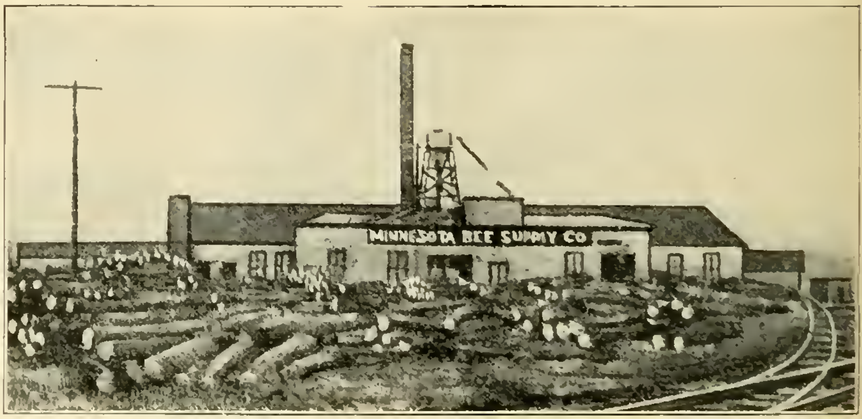

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AMERICAN
BEE JOURNAL

(Entered as second-class matter at the Post-Office at Hamilton, Ill., under Act of March 3, 1879.)

Published Monthly at $1.00 a Year, by American Bee Journal, First National Bank Building

C. P. DADANT, Editor.
DR. C. C. MILLER, Associate Editor.

HAMILTON, ILL., APRIL, 1913

Vol. LIII.—No. 4

EDITORIAL COMMENTS

Parcel Post on Queen-Cages

Queen-bees are now to be mailed according to the new rates for all fourth class matter. This allows a package of cages weighing up to 11 pounds to be sent at the new Zone rates.

Do not forget that the stamps made especially by the Government for parcel-post packages, must be used on queen-cages.

Cages should probably be made stronger than heretofore, or at least care should be taken by the shipper to see that all cages are in good condition when mailed. They should be tied securely together when more than one is sent to the same address. The labels and wire-screens should be well fastened.

We have often noticed a package of a half dozen or more cages arrive untied. In some cases one or more from such a package would arrive on the following day or be lost entirely. The increase in weight of mails should be taken account of, and cages securely packed before mailing. This caution applies to other merchandise going by mail. Live bees may be mailed only as samples, and must not have a salable value, according to the Postal Laws and Regulations. This does not affect queen-bees with attendants, but prevents the wholesale shipping of bees by the pound or more. As long as mail matter is carried in sacks, bees in bulk would not transport successfully. We learn there are some packages now carried outside the sacks, and why not bees by the pound when properly packed, just as they do by express The use of hampers for packages, in combination with the sacks for ordinary mail matter would solve the problem.

The special parcel post stamps are a *nuisance* as far as the public is concerned. Postage stamps should be legal tender on all postal matters.

Let us make our wants known before the next step is taken by Congress and the Postal Department to correct and improve the parcel post regulations for the benefit of the people at large.

Stimulative Feeding

The idea that by feeding a certain amount every day, or every other day, the activity of a colony may be greatly increased is a very attractive one to a beginner. Yet it seems necessary to repeat again and again that stimulative feeding is a two-edged sword by which more harm than good may be done, and that there are experienced beekeepers who never find it advisable to practice it. Exception may be made of localities where there comes a dearth of such duration that the queen stops or greatly decreases laying. The time between fruit bloom and white clover is the one over a large region of territory in which there is a dearth of pasturage. But it seldom happens that the dearth continues long enough to affect materially the laying of the queen, for in the spring of the year it seems natural for the queen to go right on laying for some time after a flow ceases. If the beginner wants to try stimulative feeding, let him try it on only a part of his colonies, leaving the others severely alone after seeing that they are abundantly supplied with stores. Then he may be able to tell by comparison whether stimulative feeding is a good thing in his case.

C. C. M.

The beginner will probably ask why stimulative feeding is called a two-edged sword. Because there are reefs in the method that require a good judge to avoid them.

1. You may feed a colony which is too weak to take care of what you give it, be it ever so little, and which may allow the robber-bees of the vicinity to take it away. No colony which is weak and cannot cover more brood than it possesses, should be fed unless previously strengthened in some way.

2. In stimulative feeding, there is danger of over-feeding, feeding enough to crowd the colony for room, so that the queen will have to reduce her laying. This is exactly the reverse of what we want. Then if the feeding is done at a time when the new crop is soon to begin, some of this feed might be carried up into the super at the first yield of the harvest.

3. If you feed in early spring, when the weather is too cold for the bees to fly, you will lose more bees than you will gain, for the feed will induce them to go abroad, for a few hours at least after each feed.

If your colony has plenty of honey, *some of which is unsealed*, so that the bees need not hesitate to supply the larvæ, feeding is a detriment. But if the supply, though ample, is all sealed honey, and not in sufficient quantity to crowd the bees for more room to breed, you will cause an increase of activity by either uncapping some of that sealed honey or by adding some thin, warm food. Warm food because it will be more readily taken; thin food because in spring time the bees need water to dilute the honey of which they may make the larval pap. Some scientists contend that this pap is produced by the salivary glands of the head, others that it is produced in the stomach like the chyle, and is, in fact, "chyle food." But neither of them deny that it takes a great deal of water to produce the pap. You may ascertain this when you notice that the strongest and best breeding colonies are those that send the largest number of foragers to the water-trough or the nearest pond. This is why, although dry sugar is usually taken slowly by them, we do not consider it a very good food, for it compels the bees to go repeatedly in search of water. In cool or damp days of spring many bees are lost in their trips after *cold water*.

When speaking of thin food, we mean food containing only 5 to 10 percent more water than winter food, and that is about two weights of sugar to one of water. Very thin food is injurious, for the bees cannot evaporate it in cool weather.

If colonies are short of stores after fruit bloom, we favor rather repeated feeding than lump amounts. Repeated feeding will keep them active and enhance laying. Lump feeding may be too copious, and if the crop comes suddenly it may cause the placing of some of this food in the supers. We remember once giving some destitute colonies, in May, combs of honey in the supers, to which they added honey instead of using it up, within a week, because the crop began with an unexpected rush.

Much depends upon location. But if you live in a country where there is a very marked shortage of bloom between fruit bloom and clover, keep your eyes open and feed if the breeding decreases. Never feed sugar syrup, if you have good honey to spare.

When the bees carry in honey or fresh food of any kind, there is an increase in the production of pap, an increase of attention paid to the queen and a consequent greater number of offerings of food to her. How much influence her own disposition to lay has on these attentions, no one can tell. However, it must be as with the hens, the natural tendency Nature has given them, to begin breeding as spring opens, is cultivated and increased by judicious use of warmth and food appropriately given. Judicious feeding also prevents "starved brood," which is sometimes mistaken for foul brood.

Mr. B. A. Aldrich, at the Iowa meeting of the past winter, described his method of stimulative feeding which consists in using a large feeder with only a few small holes in it through which the food passes very slowly so that the bees do not secure it faster than it may be consumed in brood-rearing. This does away with the annoyance of having to open the hives often. C. P. D.

The above had been written when the following letter was received which covers some of the points mentioned, and illustrates the ills of *over-feeding:*

> In the February number of the American Bee Journal, Mr. E. S. Miles says that "when you have fed your colony what you are quite sure is plenty, then feed it about 5 or 10 pounds more."
>
> I did this very thing to some of my colonies last winter, and obtained the worst results from these colonies. I saved the colonies all right, but the ones that I fed the most stored the least honey, and the ones that were fed little or none at all filled their hives full.
>
> I am not trying to argue against spring feeding, but I believe you can feed too much. I fed a lot of comb honey that was hardly good enough for table use, and the bees cleaned up nearly every bit that I gave them. I believe now that these bees already had enough honey to have carried them through, and that they simply carried this extra honey down and filled the comb that they had emptied during the winter, and that the queen did not have sufficient room to lay her eggs. These colonies lived all summer (and are good, strong colonies now, for that matter), and kept the bottom stories well filled with honey, but they never increased.
>
> I examined the frames in July or August, and found brood in only two or three frames in each hive, and these frames were more than half honey. All the rest of the frames were filled with honey. The bees never stored any in the supers.
>
> At present my colonies all seem strong. They have had several flights this winter, and I do not expect to feed them a pound unless something unusual happens.
>
> I have been handling bees but two or three years, and I should like to have the Editor say whether or not it is possible to feed too much.
>
> Shelbyville, Ky. H. A. WELLS.

This letter is already answered by the above remarks. There is a very easy remedy, however, for the condition which Mr. Wells describes. It is to remove a frame of honey and insert, in the center of the over-wealthy colony, a frame of empty, dry comb, or if such is not to be had, a frame of foundation, or even an empty frame. However in the last case, the bees would probably build drone-comb, which would be injurious. After the empty comb has been filled with brood the same operation may be repeated with another frame of honey, until the colony is sufficiently depleted of its overstock. Mr. Miles or Mr. Byer would have done this without hesitancy. Often an exchange between an excessively heavy colony and a destitute one will prove beneficial to both.

In all our manipulations of the apiary it is necessary to use judgment and foresight. We should remember that the advantage of the movable-frame hive over the box-hive is in the manipulations which it permits.

Wisconsin Foul Brood Law

A change in the Wisconsin Inspection law is now before the Legistature of that state. We are told that it goes among the representatives under the name of "France Bill," so well known is our good and popular friend N. E France among the law makers of Wisconsin. Mr. France would like to see the inspection of bees placed under the office of the State Entomologist. This will sooner or later be the case in every State, unless a State apiarist be appointed, as they have done in the Province of Ontario. A State Entomologist must necessarily employ a competent apiarist to look after this branch of the already numerous entomological duties. The fighting of injurious insects, and

LATER.—A card from Mr. France announces that the law has passed both houses unanimously, and needs only the Governor's signature to become a law.

The Retiring of an Old Editor

The Signor And. DeRauschenfels, for 25 years editor of L'Apicoltore, the oldest Italian bee journal, lately withdrew from active life. He is 85 years old. He is one of the progressive bee-writers of the world. In 1901 he published "L'Ape E La Sua Coltivazione" (The Bee and its Culture) with an "Atlas" of bee-culture, in which he reproduced the microscopic studies of Barbo, lithographed by Clerici. He announced his withdrawal to us in a private letter, last December, while modestly refusing to send us his photograph, saying he had none, and claiming to be "unworthy of the honor."

We have, however, secured the promise of that photograph, from an amateur artist, Signor Arnaldo Cotti, who lives in the same village, Noceto, near Parma. This is lucky, for there is no photographer in this small locality, and Sig. DeRauschenfels is not in sufficient health to go to Parma.

This noted apiarist made his retiring bow to the bee-masters of Italy in the December number of L'Apicoltore, using as his last words a parody of the short and solemn address of the gladiators to the Emperor in the old Roman arena: "Moriturus vos salutat" (He who is about to die salutes you). His successor in the editorial chair, Vincenzo Asprea, selected by the Association, is also an able writer, and we predict that L'Apicoltore will continue with him the progressive work that it has carried on for 45 years. The January number still contains some of the work of Rauschenfels, and our readers may have an idea of the diversity of his researches, when we inform them that, in that number alone, he quotes foreign bee-journals in 17 different instances, 3 of them being from the American Bee Journal, and 2 from Gleanings in Bee Culture.

The Bees vs. the Neighbors

Mr. Thos. Buckley, an old, experienced apiarist of Peoria, Ill., has a novel method to protect his neighbors against his bees, which are located in a back yard in close proximity to another back yard. He has erected a fence of wire-netting of about an inch mesh and 8 feet high. He says the obstruction is sufficient to keep the bees from annoying the neighbors, for the bees rise above the fence as they take flight. So slight an obstruction would appear inadequate, but when we think it over, we perceive that the bees like a free, open space, and when once accustomed to following a course, they never hesitate. Many a neighborhood feud might be prevented by the timely use of some such protection.

Trifolium Incarnatum

The above named clover, *crimson clover*, is highly recommended by Prof. Surface, who spoke quite at length at the National meeting concerning the high quality of this peculiar and still rare clover. When we say "rare" we mean in the United States, for it is quite common in Europe. Bonnier, in his "Nouvelle Flore," mentions it as "excellent early hay" and "much visited by the bees." In his "Cours D'Apiculture" he gives it third rank, mentioning only the esparcet and the white clover before it as honey yielders. In view of its enriching qualities for the soil, this clover should be accorded a trial wherever possible.

MISCELLANEOUS NEWS ITEMS

Water for the Bees.—I was visiting in the country. The neighbor's wife was much incensed. She was a good old mother, plump and kind hearted, but on that day she was gesticulating all alone by the cistern pump, and was addressing an invisible enemy:

"Isn't that going to stop? What do you think of it? Can't get near the pump! Those miserable bees are there all the time. If you happen to leave a little water in a pail, at the end of an hour there are hundreds of them drowned in it."

She threw out a big bunch of bees, wet and almost inert. I came near and smiled. This irritated her still more:

"They'll sting the children; they climb up one's legs; we might swallow one of them and that would kill us. I am going to complain to the police."

She was hardly to blame. I watched and saw the direction the bees took. They made a continuous line between the pump and an apiary of a few hives belonging to a man not far off. I went to him and explained to him that his bees, during brood rearing, needed water to make the pap. He was much astonished and somewhat displeased that a stranger should attempt to teach him something. His bees were thriving, and had never needed any water. His parents had kept bees before him, and he ought to know. However, he consented to place water in a dish with a a few shavings in it. In a short time the trouble was ended.—Crépieux-Jamin, in *L'Abeille de l'Aube*.

A jug filled with water, inverted over a woolen cloth in a dish will supply quite a number of colonies with a sufficient amount of water. Capillarity will draw the water out of the jug into the cloth in the same manner as the wick draws the oil from a lamp. It is well to have the jug slightly raised, so the air may get in when a vacuum is created. Some apiarists use a long trough with boards floating in it.

◆

St. Lawrence-Jefferson County Meeting of New York.—About 50 apiarists attended the sessions of this live bee-keepers' association held Feb. 20 and 21 at Ogdensburg. This is a fine attendance for a county organization; so large a number is seldom found at State meetings. Bee-keepers will find these local meetings very valuable, for little time is spent to reach them, and their business sessions are short, giving the members plenty of time for their program and informal talks and discussions.

The production of extracted honey, and how he winters his bees in Canada, was interestingly treated by R. F. Holtermann, of Brantford, Ont. Producers of extracted honey are fortunate in hearing this subject treated by so successful a bee-keeper. Chas. Stewart, a New York State Inspector, urged the keeping of Italian bees in preference to any other kind to ward off European foul brood. His experience proves pure Italians seldom contract the disease, even when an apiary is surrounded by infected yards.

Many bee-keepers took active part in the discussions, among whom are A. A. French, Chas. S. Phelps, Mr. Hammond, and N. L. Stevens.

The meeting in 1914 will be held at Watertown, N. Y.

◆

The Census of New Zealand.—Mr. Isaac Hopkins has a very interesting report in the New Zealand Farmer on the "Status of Bee-Keeping in New Zealand." In that country, census is taken every five years. The figures for 1911 are as follows:

	Bee-keepers.	Colonies of bees.	Output honey, lb.	Output wax, lb.
1906....	13,596	74,341	1,003,940	31,682
1911.....	11,002	71,584	1,457,272	28,061

During the preceding 12 months 31,736 colonies were inspected by the government inspectors, of which number 3027 colonies were found to be infected with foul brood. Mr. Hopkins, in commenting on these figures, states that while the percentage (10 percent) diseased seems large, yet it is satisfactory since the inspectors are only fairly started with their work. The percent of disease should decrease materially with each season's inspection.

Although there is a law against keeping box-hives, there are a number kept *on the sly*. They would not probably exceed 2 percent of the total, however.

◆

National Grading Rules.—The following grading rules were adopted at the National convention in Cincinnati, Ohio, Feb. 13, 1913:

Sections of comb honey are to be graded; first, as to finish; second, as to color of honey; and third, as to weight. The sections of honey in any given case are to be so nearly alike in these three respects that any section shall be representative of the contents of the case.

I.—FINISH.

1. Extra Fancy.—Sections to be evenly filled, comb firmly attached to the four sides, the sections to be free from propolis or other pronounced stain, combs and cappings white, and not more than six unsealed cells on either side.

2. Fancy.—Sections to be evenly filled, comb firmly attached to the four sides, the sections free from propolis or other pronounced stain, comb and cappings white, and not more than six unsealed cells on either side, exclusive of the outside row.

3. No. 1.—Sections to be evenly filled, comb firmly attached to the four sides, the sections free from propolis or other pronounced stain, comb and cappings white to slightly off color, and not more than 40 unsealed cells, exclusive of the outside row.

4. Standard.—Comb not projecting beyond the box, attached to the sides, not less than two-thirds of the way around, and not more than 60 unsealed cells exclusive of the row adjacent to the box.

II.—COLOR.

On the basis of color of the honey, comb honey is to be classified as: first, white; second, light amber; third, amber; and fourth, dark.

III.—WEIGHT.

1. Heavy.—No section designated as heavy to weigh less than fourteen ounces.

2. Medium.—No section designated as medium to weigh less than twelve ounces.

3. Light.—No section designated as light to weigh less than ten ounces.

In describing honey, three words or symbols are to be used, the first being descriptive of the finish, the second of color, and the third of weight. As for example; Fancy white, heavy (F. W. H.); No. 1 amber, medium (1 A. M.), etc. In this way any of the possible combinations of finish, color and weight can be briefly described.

CULL HONEY.

Cull honey shall consist of the following: Honey packed in soiled second-hand cases, or that in badly stained or propolized sections containing pollen honey, dew honey, honey showing signs of granulation, poorly ripened, sour or "weeping" honey; sections with comb projecting beyond the box, or well attached to the box less than two-thirds the distance around its inner surface; sections with more than 60 unsealed cells, exclusive of the row adjacent to the box, leaking, injured, or patched-up sections; sections weighing less than ten ounces.

Mrs. Harriet France, a highly respected resident of Platteville, Wis., died Feb. 13, 1913, age 78 years, at the home of her only son, N. E. France. Her life had been despaired of for some time, and the devoted care and loving attention of her family could hold her no longer. Mrs. France was born July 6, 1834, in the State of New York. When 16 years old she joined the Methodist church, of which she has been a devoted member.

At the age of 22 she came alone by lake boats and overland stages to Platteville, Wis. July 23, 1856, she was married to Edwin France, formerly of New York. From here they went by stage to their pioneer western home in Iowa, Mr. France farming during the summer and trapping valuable furs during winter. He became expert with the rifle. The Iowa ranks of sharpshooters for the Civil War being filled, Mr. France, with his wife and little boy, returned to Wisconsin in hopes of here enlisting. It took over two weeks to make the journey with their ox team. His health at once failed. Unable to join the ranks, or return to their western home, he engaged in selling sewing machines, and producing choice fruits and honey. Over 48 years Mr. and Mrs. France have resided in Platteville. E. France, aged 84, died five years ago. There is left to mourn their loss, N. E. France and wife; also five grandchildren.

This ever kind mother has run the journey of life well, the path marked with deeds of kindness and cheer.

The Late Mr. E. France and Wife.

Progress in Ontario.—That the department of bee-keeping at the Ontario Experiment Station is not going to let that of the States excel in progress is evident from what they propose to do this season.

Mr. Morley Pettit, the director, is asking for volunteers in the ranks of the Ontario bee-keepers to aid him in a series of experiments under the supervision of the department as follows:

1. Method for the prevention of natural swarming in extracted honey production by holding the colony together.
2. Method for the prevention of natural swarming in comb honey production, by artificial shaken-swarming.
3. Method for the prevention of natural swarming by manipulation of hives rather than combs.
4. Method of spring feeding to stimulate brood-rearing.
3. Method of packing bees when taking them from the cellar.

Of these, the first three were tried last season by a number of bee-keepers with the result that in the first the swarming was decreased from 48 percent to 21 percent; in the second the swarming was reduced from 100 percent to 57 percent; in the third the swarming was but 14½ percent as against 39 percent when the bees were left to swarm naturally. A resultant increase in honey with colonies managed according to plans of the department was very evident.

The department figures, from statistics gathered last season from the bee-keeper experimenters, that there is an annual profit in bee-keeping of 58 percent on capital invested. This, of course, does not take into account the cost of labor involved.

Pure Italian stock is recommended to every one, owing to its ability to resist European foul brood.

Spring Notes.—The following from Morley Pettit, Provincial Apiarist of Ontario, is applicable to warmer latitudes also.

"If the hive is warm they can spread out and cover more brood. This means more young bees will be hatched in the same time. Then when summer comes there will be more workers in the hive to gather honey. Any one who thinks about this for a moment will see why all hives should be kept warmly packed and sheltered from cold winds during what bee-keepers call the spring breeding up time, right up to settled warm weather.

On the other hand, entrances must not be closed. There is that about bee nature which does not brook confinement, and except when bees are screened in for moving, they must have 'free ingress and egress' to their hives. On bright, cold days it is well to shade the entrance, however, lest the sunshine tempt some bees to come out and be lost on the snow."

Illinois Bulletin Issued.—Foul Brood Bulletin No. 1, of the Illinois State Bee Inspection Department, has just been issued. Copies may be obtained by addressing Mr. A. L. Kildow, State Bee-Inspector, Putnam, Ill., or by addressing the American Bee Journal office, Hamilton, Ill.

Death of Oliver Foster.—Just as we are going to press, we learn of the death of Mr. Oliver Foster, of Colorado. Mr. Foster was a large honey-producer and an authority on comb-honey production. A sketch of his life will be given in the May issue.

Honey-Bread in Europe.—The food value of honey seems to be better understood in the "old countries" than over here, and enormous quantities are used. Cakes and sweet-breads made with sugar soon become dry and crumbly, and to get the good of them they must be eaten when fresh; but where they are made up with honey, they seem to retain their moist freshness indefinitely. In France, honey-bread a year or 18 months old is preferred to that just made. They say "it has ripened." It is the preservative, or

An Orchard of Almond Trees

rather the unchanging quality of honey, that makes it so popular with the best confectioners.—*Exchange.*

The Bij-Vanger or Bee-Pirate of Africa.—In our September and November numbers for 1912, we made mention of the bee-eating philanthus of Europe, and of the experiments carried on by the celebrated entomologist Fabre. The South African Poultry Magazine, published in Johannesburg, in its December number, contains an article by G. B. Oettel on these insects:

This season the dry weather has brought along the familiar yellow-bodied *bij-vanger*, now more commonly known as the "Pirate." This insect haunts the watering places of bees and entrances of hives, especially those which are not provided with a fairly wide porch for shade, and seizes the bees which are unwary enough to be about at the time. Her depredations—for it is only the female of the species that commits these raids and onslaughts on the inmates of the hive—are serious, and often demoralize the whole apiary.

I have seen whole colonies listless and "at home," fearful of the attacks of these horrid insects which hover, sometimes a dozen at a time, in front of the entrances, awaiting the incoming heavily-laden-with-stores-bee, as she drops over-burdened upon the alighting-board, preparatory to crawling inside to disgorge her supplies of nectar, or to get rid of the huge loads of pollen collected for the steadily increasing patches of brood which should now be filling every available space within the hive.

For the town bee-keeper the only really effective way to get rid of these insects is to catch them by means of a butterfly-net. This is readily accomplished by choosing a sunny day for the time of our operations. Half an hour spent in this way several mornings or afternoons will soon effect a clearance. My experience has been that the pirates quickly find out the danger zones, and leave them for other centers where their depredations are not disturbed. In this connection several informed me that poultry are excellent catchers of these pests, par-

An Apiary in California in the Midst of Almond Blossoms.

ticularly when the alighting-board of the hive is fixed just above the height of the birds' heads. They look out for the scuffle which invariably follows the attack of the pirate, and when both insects roll off on to the ground, one peck sees the end of the invader's temerity, and she herself rests in the crop of the fowl.

◆

An Illinois Bee-Keeper Passes Away.—Mr. S. T. Crim, of Dawson, Ill., who died Jan. 14 last, had almost rounded out his 73d year. Coming from Loudoun Co., Va., where he was born Feb. 29, 1840, he spent the last 30 years of his life in Illinois, keeping bees.

The Illinois State Bee-Keepers' Association will miss one of its older loyal members, who stood for the right and for progress.

◆

Kansas Loses Appropriation. — The bee-keepers of this State fared badly at the hands of the Legislature, whose watchword seems to be economy in appropriations, but in many cases crippling the legitimate interests of the State. We have a splendid foul brood law, and that is all. We did not receive one cent as an appropriation, and, more than that, it took the hardest kind of work to keep them from repealing the law itself.

O. A. Keene, *Sec.*

◆

A Pleasing Picture of Flowers.—On the front cover page of this journal is a picture of wild asters or daisies, taken by Wesley Foster. He wrote us:

"This little clump of flowers was growing in an orchard close to one of the apiaries of Mr. W. P. Collins, of Boulder, Colo. He is president of the Colorado Association.

"The bees were busily gathering pollen from the flowers before I frightened them away in focusing my camera."

BEE-KEEPING FOR WOMEN

Conducted by Miss Emma M. Wilson, Marengo, Ill.

Manufactured Honey

A loyal sister sends the following, clipped from a religious periodical, with a woman's name signed to the clipping:

> Put three pounds of granulated sugar into a porcelain vessel. Add sufficient water to moisten and make a thick syrup. When boiled to a syrup add one pound of good honey and let the mixture come to a boil. Remove from the fire and pour in vessels desired. The increased quantity will be found as good as the original pound of honey, and a great many people like it better because of the absence of the honey comb, which is dissolved.

That woman and that religious periodical might be in better business than giving publicity to such stuff as that. Let us be charitable and attribute it to ignorance, for no intelligent mother would be likely to palm off upon her children a mixture of three parts sugar to one part honey as being "as good as" pure honey. That woman is probably entirely ignorant of the fact that thousands are injured in health by the excessive demand made upon their digestive organs in changing cane sugar into invert sugar, whereas honey is ready for direct assimilation without making any such demand. Taking this view of the case, a pound of sugar is not as wholesome an article of diet as a pound of honey, and neither are three pounds as good, even though a pound of honey be added.

That statement that "a great many people like it better" would be laughable if it were not sad. If we "let the mixture come to a boil," the sugar part is as good as ever, but the honey is injured beyond repair. The delicate flavor and aroma of honey will not stand boiling. It is a pretty safe guess that the woman in this case did not learn from her own children that they liked the boiled mixture better than the unboiled honey.

But the reason given why "a great many people like it better" is "because of the absence of the honey comb," and the honey comb is absent because it "is dissolved!" That's something new under the sun. Dissolve a thing and presto, it is gone! Equally new under the sun is the idea that one can dissolve wax in hot sugar and honey. Heretofore the most that could be done in that way was to melt it. And if "a great many people" like honey better with no comb, or with the comb dissolved, it seems a bit strange that they will pay a higher price for honey in the comb than for the pure honey extracted from the comb. Poor woman! Poor periodical!

◆

A Sister's Experience in Wisconsin

I started with 2 colonies about 5 years ago, and have 28 now. I have not tried to work for lots of colonies, but to keep them strong in bees. Two years ago I took 15 colonies out of the cellar and secured 1200 pounds of honey and increased my bees to 27 colonies.

Last year, being a very poor year, I did not get any honey; it was too dry. This year I had to unite a few colonies, as I had a few queens laying nothing but drone eggs. I got about 700 pounds this year. I tend the bees myself.

(Mrs.) George Schmidt.

You were very wise to run for strength rather than number of colonies, and you certainly did well to get 80 pounds per colony, and nearly double your number of colonies besides.

◆

Color of Pollen

Miss Annie D. Betts, who appears to be one of the keenest observers among British bee-keepers, reports some observations upon pollen that are interesting, British Bee Journal, page 33. Two observers may report two different colors of pollen from the same plant, and both may be right. The pollen of *Erica cinerea* may be quite pale gray, varying from this to almost black. This variation is largely due to the presence, in some of the loads, of portions of anthers, sand, etc. A great quantity of such "foreign bodies" is found in the dark-colored loads, less or none in the light-colored ones. It is possible, too, that the color of the pollen, like the quality of the nectar, may be affected by soil and climate.

Miss Betts says:

> It appears that the color of pollen is also

Mrs. G. Schmidt in Her Apiary.

greatly affected by the state of the weather. I have noticed that loads of chestnut pollen (*Castanea vulgaris*) are nearly lemon-yellow on dry days, but distinctly green shortly after rain. A writer in the Bienen-Zeitung of 1891, page 171, points out that the color of pollen varies with its age, and also with the weather. He describes the pollen of the opium poppy (*Papaver somniferum*) as green when young, becoming whitish when older. He also states that pollen secretes more oil on its surface on good nectar days; and suggests that the bees use this oil to stick the pollen together when collecting it. That they do this consciously is doubtful, especially in the light of Mr. Sladen's observations on how the corbicula is filled, but the more oily pollen would certainly stick together better; and this may partly account for the enormous loads carried home on fine days, and the very small ones seen in bad weather (though these last are probably also due to the scarcity of pollen on such days).

Some of the differences of opinion as to the color of pollen have arisen from the circumstance that a load of pollen, if kept, will often, as Mr. Macdonald points out, change color. On one occasion I took from a bee a load of bright red pollen probably from a *pelargonium*, though I could not trace it). It was kept in a drop of water on a glass slip covered with a cover glass, and next day was no longer red, but yellow. The substance producing the red color had either evaporated or undergone some chemical change. (The drop of water had naturally dried up in the course of 24 hours.)

Lost All Her Bees

The reason you have not heard from "Ima" for some time is that she lost all her bees during the winter of 1911-12, and was unable to buy any near to start over. However, I think this spring I will buy several colonies, and you will be hearing from me with a tale of my experiences, for I expect caring for the bees, and there is nothing I like better than to write about them. John is trying to persuade me not to get any more bees. He is still very much afraid of them. "Ima."

I am sorry that you lost all your bees, but glad that you have not lost your interest in them, and hope you may be very successful in getting that new apiary started this spring.

Experience With Many Eggs in a Cell

In the February issue of the American Bee Journal is an item entitled, "Cause of Many Eggs in a Cell."

In the spring of 1911 I had a swarm of bees whose queen laid drone eggs. I thought I would requeen the swarm, but could not find the queen. I tore the hive all apart, gave them a new body, looked the frames over very carefully, and shook the bees in front and watched them crawl in. I went back the next day and tried to find her, but could not.

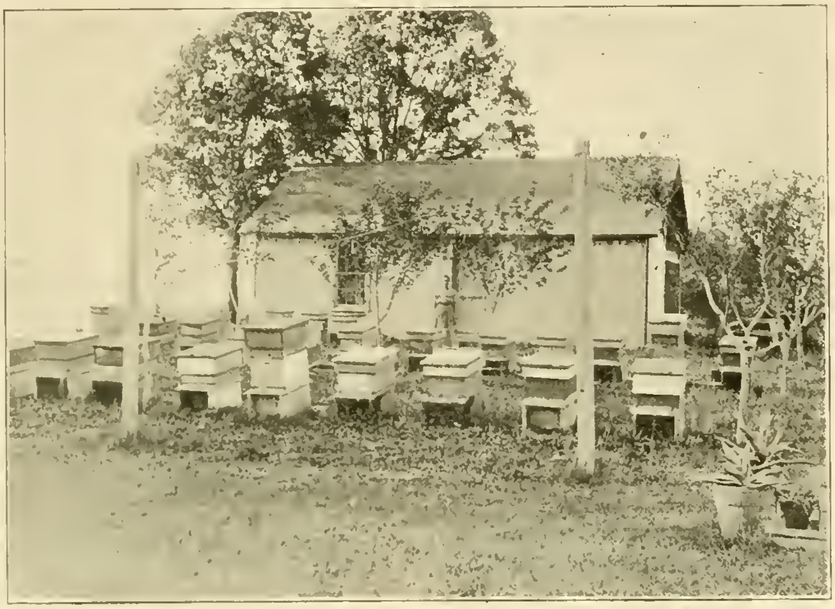
Thinking that she was dead, I put in a caged queen. After leaving them alone for three days I went back and found the new queen dead. I opened the hive, and on the first frame I took out I found the old queen. I shut the hive up with disgust, and did not go near it for 10 days. I then found several queen-cells and more started from drone eggs. What became of that old queen I never knew. In another hive I had a good queen-cell. I gave it to them. In two days it hatched, and 10 days later I noticed that the queen was fecundated. In due time I saw worker brood capped over, and I can safely say I saw hundreds of cells with from two to eight eggs in a cell.

Later I looked into the hive and those cells had just one grub in a cell, and there were lots of cells with several eggs in a cell; even the sides of some of the cells had eggs on them. The swarm was very small by this time, so I gave them hatching brood from other hives. That queen laid several eggs in each cell until the swarm was strong in bees. That was one of my best swarms in 1912.

(Mrs.) A. A. Good.

Lakewood, Wash.

This is a plain case of plurality of eggs in a cell because there was a prolific queen with too few bees to take care of all the eggs she could lay; just what usually happens in such a case.



Another View of Mrs. Schmidt's Apiary.

FAR WESTERN BEE-KEEPING

Conducted by Wesley Foster, Boulder, Colo.

Bee-Keeping Upon the Divide South of Denver

There are many more counties in Colorado where bees assume an important role than bee-keepers realize. Upon the divide, south and east of Denver, is a beautiful country (for the plains) at an elevation of from 6000 to 7000 feet. This country, slightly rolling, has quite a little timber and a more abundant rainfall than the lower plains to the east. The Demonstration train made three stops—Elbert, Elizabeth, and Eastonville. Alfalfa is grown without irrigation, and produces considerable white honey. Sweet clover helps out more than it is given credit. The bees undoubtedly gather considerable honey from the wild-flower bloom in the neighboring hills.

Swarming is prevalent from May to September, and the farmers get little honey. "The yellow jackets get rid of the bees," they tell me, but I am of the opinion that the yellow jackets get rid of only those colonies that have swarmed themselves to weakness and late swarms that are so weak that they do not get honey in sufficient quantity to winter. A handful of bees issuing as a swarm in September is not an uncommon occurrence. What can be expected of such a colony?

Nearly every farmer has a few hives, and those who give them care are getting fair returns. The local market is not supplied except by honey from the heavier producing districts.

From my present knowledge of the markets, I believe that Colorado could consume a much larger percentage of our total crop than at present. The higher price obtainable in the eastern markets determines where the honey will go. Colorado markets are now comparatively destitute of comb honey. If some of the honey that has been shipped East was now available for the home market, a better price would be realized than was had the past fall. Bee-men want the money for their honey, and the local dealers will not buy the year's supply of honey outright, so the honey goes East.

It is possible that I may be a little hasty in saying that the comb-honey market is cleaned up in the West, but I do not know of any quantities at hand, and I do know that some fair markets for comb honey are very poorly supplied at this writing, March 10. Denver wholesalers quote comb honey to our Boulder merchants at $3.50 per case of 24 sections. This honey will probably grade choice or better.

The Alexander Plan of Increase is a Favorite Method in Colorado.

Keep all Wax and Propolis Removed from the Frames.

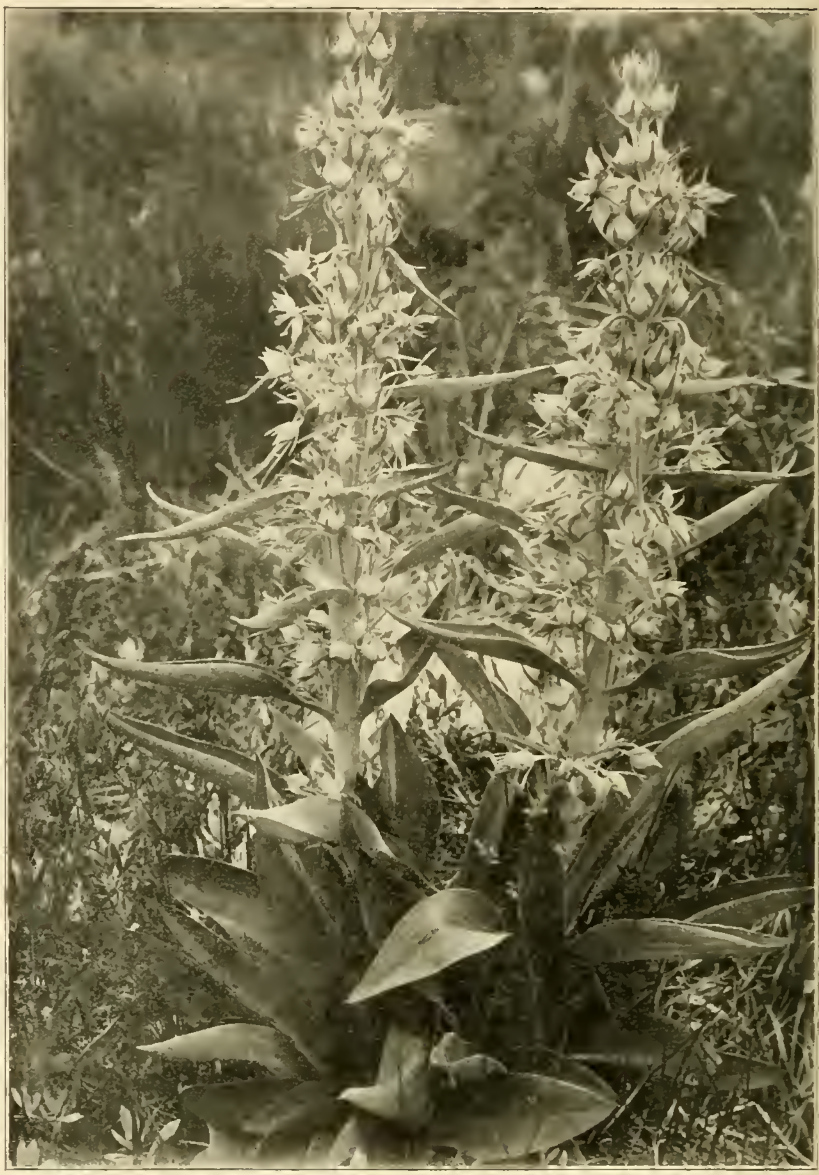
Sweet Clover Gaining Recognition

The lowlands along the Arkansas River, near Holly, Colo., are being taken by sweet clover apparently. This land is alkali in places, and the farmers are getting feed value out of the clover instead of fighting it. Lord Ogilvy, agricultural editor of the Denver Post, recommends the growth of sweet clover on this land. The interest in this crop is such that it seems a sweet clover institute would be welcomed.

Shallow Frames for Producing the Home Supply of Honey

There are probably a few thousand farmers in Colorado who have bees. The majority have modern hives arranged for comb-honey production, or section-holder supers to put on top of their box-hives. These farmers use a large part of their honey at home, cutting it out of the honey-boxes and putting them back on the hive. How much better it would be for them if they would use shallow frames in the supers. More honey would be secured, and the expense for sections avoided.

This is one of the things being shown on the demonstration train now touring Colorado for a month's trip. Mr. Frank Rauchfuss has advocated this plan for the farmers for some time. It is being followed by quite a number.



The Monument Plant—A Monarch of the Mesas.

Monument Plant

The monument plant has light creamy blossoms 2 inches in diameter; the flower stalks growing 2 to 3 feet tall is visited by scores of bees. A velvety green leaf makes this a brilliant desert flower. Any park would be graced by its presence. The mesas are dotted here and there with them, and as a source of honey during May, the monument plant is important.

Many on first sight call it the yucca, which it is not, as it has not the spine-shaped leaf. The monument plant is "monarch of the mesas," as no stock will eat the leaves. Perhaps you can find the bee on the blossoms.

Honey Recipes

Three thousand copies of the following recipes by Mrs. A. Rauchfuss, were given out on the Colorado Agricultural College demonstration train carrying a bee-keeping exhibit:

Honey Brown Bread.—One cup corn meal, one-half cup honey, one cup rye meal, one cup sour milk, one teaspoonful salt, one teaspoonful soda. Steam four hours, then dry in oven 15 minutes.

Aurora Honey Cookies.—One cup of honey, one pint sour cream, one even teaspoonful soda dissolved in a tablespoonful of boiling water.

Mix honey, cream and soda together thoroughly, add a cup of chopped nuts (any kind desired), one teaspoonful of ground ginger, and a heaping tablespoonful of ground cinnamon. Add flour enough to make a dough stiff enough to handle easily on the board, roll out part into buttered tins and bake in a moderately hot oven until nicely browned.

Honey Ginger Snaps.—One cup of butter, one cup of sugar, one cup of honey, one cup of water, one heaping tablespoonful of ground cinnamon, one scant teaspoonful of baking soda.

Sift soda into 1½ pints of flour, cream the cup of butter with the sugar, add other ingredients and more flour to make a dough that can be rolled out. Cut into desired shape and bake in a moderate oven.

Sea Foam Candy. — Two-thirds cup of honey, three cups granulated sugar, whites of two eggs, one-half cup boiling water, one teaspoonful of vanilla, one cup of nut meats.

Boil honey, sugar and water until if tested in cold water it is brittle. Pour this in a thin stream over the whites of two well beaten eggs, beating the whole all the time until like a thick cream, then stir in briskly the nut meats and vanilla, and pour out into a buttered dish. After it has hardened cut into squares.

Spring Meetings of the Colorado State Bee-Keepers' Association

The Western Slope in Colorado is so remote from Denver, where our conventions are held annually, that few of our members there can get to them. A spring meeting of bee-keepers, held under the auspices of the Colorado State Bee-Keepers' Association, is being arranged for the Western Slope, probably at Delta, and one may be held at Grand Junction. The meeting will be held in April. Particulars may be had from the secretary, Wesley Foster, of Boulder. Notices will be printed in the local papers. These are aimed to be bee-keeping institutes for discussion and questions.

SOUTHERN BEEDOM

Conducted by Louis H. Scholl, New Braunfels, Tex.

Prospects for an Early Season

The winter here has been unusually fair, with very little severe cold weather as compared with former years. The cold weather was of short duration, but much rainy weather prevailed, This tends to bring an early spring. and early honey-flows. The catclaw, "guajilla," and mesquite, all early honey producers, are all three benefited by fall and winter rains. Therefore, the prospects for a crop from these sources are very bright.

A peculiar circumstance is that, although the winter has been warm, the mesquite trees, etc., have not shown any signs of coming out of their winter dormancy. The buds have not begun to swell, while many trees are in foliage by the beginning of March. I have noted this dormant condition of the mesquite trees in previous years. When the buds do begin to swell they develop with such rapidity that the entire mesquite trees are soon covered with a profusion of luxuriant nectar-yielding bloom, with hardly time to get bees in shape for this early flow. I anticipate such a condition this year unless late frosts should interfere. This is hardly to be expected. The prospects are good, and following the short crop of last season, the bee-keepers feel very much encouraged.

Bee-Keeping in Mexico

There has been enquiry about bee-keeping in Mexico, and it has been our purpose to collect such data as might be of interest. On account of the present disturbances in that country, however, we have not undertaken this work. But through the acquaintance of several friends in Mexico, some of whom have studied the bee-keeping industry of that country, we shall be enabled to procure some reliable notes of existing conditions, which we expect to give.

There is no doubt but that much nectar is going to waste in many Mexican localities, which might be profitably secured by progressive and adventurous bee-keepers. Whether it can be made to pay is what must be investigated. For this reason it is highly important that the market situation be looked into properly, both as to demand that might be worked up for the product obtained, as well as the price and distance to market and cost of transportation.

It is apparent, from the several inquiries received, that much interest would be given to the matter of Mexico bee-keeping if conditions there were not so unsettled. It will be only a question of time when every thing will be quiet again in that country, and this will very likely be followed by some progress in Mexico's bee-keeping conditions also.

We would be grateful to all who can give us any information on bee-keeping in Mexico, to kindly write us. Direct to New Braunfels, Tex.

Net or Gross Weight of Honey Packages

The question of proper weight of standard honey packages is becoming more serious each year. It is time the bee-keepers "get together" and come to a final agreement regarding this very important matter. The demand for packages holding full net weight of honey to the can or pail is increasing. The largest buyers of honey are careful to put into their enquiries regarding prices, a proviso of full net-weight packages, and require a guarantee of this from producers.

We have experienced some trouble with a few buyers who did not understand that a certain size package on the market could not be filled with the desired amount of honey because that package was not large enough to hold it. The only way is to procure packages that will hold the proper amount. The pure food laws require it, and this would not only protect the consumers, but also the bee-keepers who are aiming to give full value for the money. Many bee-keepers sell what is known as *short* gallon, half gallon and quart cans of honey. There would be nothing wrong with this if it was made known that these packages were actually short in weight. But when the individual containers are not labeled the discovery is not easily made. But it is not fair to those producers who put out the same kind of packages holding full net weight, 12 pounds to the gallon, 6 pounds to the half gallon, and 3 pounds to the quart can.

Especially is the difference noticeable in the crop of an extensive honey producer. For instance, if one bee-keeper markets a crop of 50,000 pounds of honey in the size of packages mentioned, and he gives full weight, it means a loss of several hundred dollars to the honest packer, as against the man who gives short weight. Both producers and buyers are familiar with the standard size packages of honey, universally put on the market. There are the two 60-pound square cans to a case, ten 12-pound round pails to a case, and ten 6-pound, and twenty 3-pound to a case. The producer quotes his honey at so much per pound for each according to style of package, viz.: so much per pound for two 60-pound cans to a case, so much for ten 12-pound pails to a case, and so on. He makes out his invoices, bills, etc., for 120 pounds of honey in each case, and 60 pounds for the ten 6-pound and twenty 3-pound cans. On his cases he may also have the same indicative figures, showing either two 60-pound, ten 12-pound, ten 6-pound, or twenty 3-pound cans of honey to the case.

Since the buyers make their orders in the same manner, or so many cases of two 60-pound cans, ten 12-pound pails, or 6-pound, etc., at so much per pound, it would indicate that both producer and consumer allude to actual contents of honey in each case. It would be only natural to suppose the two 60-pound cans of honey to a case would mean 120 pounds of actual honey, especially since the buyer is charged for 120 pounds at so much per pound. Nothing is said about the weight of the cans or about a charge for the containers, or the short weight of honey, should full weight packages not be used.

We bring this matter up, first, to aim at an adoption of proper sizes of honey packages for all alike; second, to make it fairer for every bee-keeper, so one need not lose or be compelled to compete with others who make use of short-weight packages, when the former furnishes full weight, or desires to do so for honesty's sake; and, third, that no trouble may arise with reference to complying with the pure food laws.

CANADIAN BEEDOM

Conducted by J. L. Byer, Mt. Joy, Ontario.

Noxious Weeds as Honey-Producers

On page 46 of the February issue, is given a list of noxious weeds banned by the State of Iowa, with the statement that none of them, fortunately, are honey-producers. Mr. Editor, you had better scrutinize that list again. What about wild mustard? If it is the same mustard that grows here in the grain fields, that weed is a fine honey-yielder, as many bee-keepers will be ready to attest. Then what about milkweed? Here is one of our most profuse yielders of nectar; but in most localities it is not plentiful enough to cut much of a figure in the surplus.

It takes quite a heavy toll of bees, while they are working on the plant, owing to the peculiar glutinous, stringy pollen; yet I would be glad to have a few hundred acres within reach of my bees, as the one locality where it is plentiful always thrives when it is in bloom. Then what about the much maligned Canada thistle? While we do not cultivate this plant, nevertheless where it is plentiful enough to be of any account for the bees, it yields the most delightfully flavored honey that can be produced, and its color is in keeping with the flavor—very light.

At the Lovering yard, illustrated in the February issue, the thistles are plentiful in the rich bottom land that surrounds the apiary, and last season they blossomed freely when basswood was in bloom. The resultant honey is a blend of basswood and thistle, and we are using it on our table in preference to any other; in fact, Mrs. Byer, who is very particular as to the honey she uses, declares it has spoiled all chances of her ever preferring any other honey. A number of friends who have been at our place this winter, declare it tastes like the "bumble-bee honey they used to have when they were young." To all who were brought up on the farm, it will be needless to describe what they mean by the phrase, as it has to be realized to understand the description.

A Honey House

As the building used at the home apiary was very old, the foundation rotten, and the roof beginning to leak, I decided a year ago to put up a new building. Being very busy, and unable to get dry lumber, I decided to build the house of corrugated iron. This iron is painted red, and is sold by manufacturers of metal roofing and kindred goods. The shingles are also metallic, and painted the same color as the siding. How it will last remains to be seen, but if kept well painted I am told that the metal will stand the weather for a long time. It may be asked, is it not hot to work in it during warm weather? We have found no trouble from that source when the windows are all open, as is the case when extracting. The windows are large, 24x30; there are two in the west side, one in the east side, in both ends, and we get all the breeze there is. When the windows are closed, and the weather hot—well, it is a good place *then* to keep extracted honey.

The windows are screened on the outside, the screens being removable. Inside they are closed with a sliding panel, and bee-escapes can be placed in frame of outside screens as desired. The foundation is of concrete, and the floor is also of the same material, so there is no danger of the floor breaking through. The building is 14x20, with 8 feet siding, and the cost, no counting gravel for floor and walls, was about $60. This includes all labor except the hauling of the gravel and two days' work when I helped to lay the floor and do a little excavating for the walls.

A Metal Bee-House.

A Corner of Mr. Byer's Apiary.

Picture No. 1 shows the west side of the building; the trees on the south side are Norway spruce that have been trimmed up about 25 feet, to allow the sun to shine in the yard. The other picture shows the east side, next to the bees. As will be noticed, the window on this side is a long way from the door—a very desirable feature in any honey house, as the bees do not bother around the door so much, being attracted to the screened windows. Indeed, when the windows are all opened a bee seldom tries to get in the door, even if we are extracting during a dearth. Owing to the corrugations in the siding, it was necessary to put beam filling of cement concrete mixed fine along the plate at the top and along the sills at the bottom, to prevent bees from getting in the openings. If plain iron is made for building purposes, this could be avoided, as it would nail down tight to the plates and sills. The hives right against the building are some empty ones—only a few of the occupied ones appearing in the corner of the yard, with shade-boards leaning against the entrances.

Value of Willows

The different varieties of willows are all valuable to bee-keepers, as nearly all yield pollen, and some are very heavy yielders of nectar. They are very easily propagated, and will stand very hard usage in early growth; in fact, will flourish under circumstances that would kill other trees outright. The view shown in the picture was taken from our door-step. For years this flat was pastured closely, and everything in tree life was destroyed. Five or six years ago his flat was left for hay, and now willows are springing up all along the banks of the stream, even if floods of ice do wash against the young trees every spring.

Willows are Good for the Bees.

In the center of the picture the willows can be seen along the frozen stream, and down near the brush where the stream winds along the bank these willows are 25 feet high.

A camera helps one to appreciate Nature. The landscape above is the view shown from our door. While I have often seen travelers, in the summer time, stop and take a picture of these flats, I never appreciated the beauty of the place until I had taken a picture myself.

Bee-Work in Winter

Replying to Miss Wilson, page 83, I would remind her that I spoke of "real work in the apiary." Yes, I make plans, "build castles in the air," etc., during the winter months. I often spend the hours from 5 until 7 o'clock *in bed* at this planning, when, in the summer time, I would be out-of-doors. I read a lot, and write quite a bit, but then all this planning, reading and writing is not real *work* to the chap that is outdoors all summer hustling.

Producing extracted honey we have no sections to fill with foundation, and as for scraping all the extracting combs, we do that in April and May on days not fit to work with the bees.

The Odor of European Foul Brood

Regarding *smells* associated with European foul brood (page 42), to some people especially on the other side of the line, the disease is not repellant to the olfactory nerves, while here in Ontario it is obnoxious to an extreme degree. It was my lot to find the first bad cases in Ontario, and I agree thoroughly with Mr. Pettit and Mr. Harris. After learning the disease with its characteristic odor, my *nose* was all I needed to tell if European foul brood was present. A badly diseased apiary could be smelled 100 feet if the wind was right, and a mildly diseased colony could be detected by placing the nose at the entrance. The latter test is a good one for American foul brood, too, provided the top of the hive is sealed closely to avoid upward circulation.

I have read again what friend Sladen, of Ottawa, Ont., said about the question, and now the whole solution of the problem is plain to me. Mr. Sladen admits the smell is "extremely strong," and that a "penetrating odor is given off" from a foul colony, *but* he further states that, to *him*, the odor was "gamey" and "appetizing."

There, you have the situation in a nut-shell. To friend Pettit, as well as myself and a number of other Canucks, the smell of European foul brood is highly obnoxious. To Dr. Phillips and a number of other friends, it is a "gamey" odor, and "appetizing" in its effect. "Tastes differ, as the old lady said when she kissed the cow."

BEE-KEEPING IN DIXIE

Conducted by J. J. Wilder, Cordele, Ga.

Do Bees Consume More Stores in Mild Winters?

My experience is that they consume less, and at the same time rear more bees. This had been an unsettled question with me, but the past winter has settled it. It was one of the mildest winters we have experienced, and much of the time the bees were as active as in spring. They have consumed far less stores than ever before. The brood-nest contains lots of honey; in fact, too much for brood-rearing, and we have removed it.

From reports, many other Dixie bee-keepers are experiencing the same thing (too much honey in the brood-nest). Remove the heaviest broodless combs and put empty ones instead. Owing to the late heavy honey-flow last fall the bees were a little heavier with stores than usual, but an unusually small amount of stores was consumed.

Wintering in Florida

After taking a look at the photograph on page 16 of the January number of the American Bee Journal, many bee-keepers wrote me they wished they could be with me in the land of flowers. A number visited me, and we had a good time fishing, launch riding and oyster gathering. The beautiful shell beach for miles along the coast was our "stamping ground." We visited orange groves, etc. They were happy and well spent hours, but the bee industry was our hobby, and much valuable information was exchanged.

There were bee-keepers with me from all parts of the country, and even far off Canada was well represented. The country and climate proved an attraction to many. They invested in real estate, and expect to spend the winters there.

Apiary Work

The honey-flow is now on in almost all parts of Dixie. Bees are swarming, and must have constant attention for the next few weeks, looking out for swarms, keeping hives supplied with plenty of super room. This can best be done by raising the supers they have and inserting the new below, next to the brood-chamber. This should be kept up for 3 or 4 weeks; then let them fill all the supers they have started.

Almost all bee-keepers in Dixie use but one super for each colony, when they should have three, so the bees do not store much surplus and swarm too much. Plenty of storing room will check swarming and keep the bees at work, and far more honey will be harvested. If the hives are elevated from their bottoms by means of a ⅞-inch square strip placed under each side the same length as the hive, it will give good ventilation. This will also check swarming and loafing, or lying outside. Now is also a good time to make artificial increase by dividing the colonies that have started queen-cells into two equal parts; if possible leaving the queenless part on the old stand.

This equal dividing of brood, bees, and honey cures colonies of the swarming impulse, and, as a rule, the two divisions will store more honey than if left undivided. They make the best colonies for the next flow during summer or fall.

The Orange as a Honey-Plant

This includes all citrus fruit; the orange, lemon, lime, cumquats, tangerines and grape-fruit. This fruit grows extensively in many sections of southern Florida, and furnishes abundant pollen and nectar for the thousands of colonies that are located there. In some localities it yields on an average as much as 50 pounds per colony of surplus honey, which is a very light amber, has a heavy body, and very fine flavor. The taste is correspondingly exquisite, with the odor of the blossoms which cannot be excelled. What adds much to its value as a honey-plant is that it begins blooming in February and lasts for 6 or 8 weeks, covering a period of time when there are no other honey-plants in bloom.

The bees build up during this flow, and at its close the saw palmetto begins blooming. This is the greatest honey producer along the coast of Florida. Aside from its value for honey, it has no equal as a fruit producer. Take a look at the photograph, and see the trees so laden with the delicious golden-colored fruit that the limbs rest on the ground. Nothing makes a more beautiful picture to me than groves containing hundreds of acres of this great fruit. The man standing on the right is Mr. E. B. Rood, of Bradentown, Fla. The others are his fruit pickers, rigged up for business. Mr. Rood is an extensive bee-keeper and fruit grower. Thousands of people come here from all over the United States during the fall and winter months and engage in gathering, sorting and packing this fruit. They have a delightful time during the winter in this ideal climate, and return the following spring with a heavier purse. Many of them are bee-keepers who appreciate a good thing.

Eight or Ten Frame Hives?

Dear Editor:—On page 16, of the January number, you call me out for preferring 8-frame hives. I do not allow natural swarming, so the size of swarms that may go out is of no consideration. Then if you refer back, you will see that an 8-frame hive-body and a regular shallow extracting super compose the brood-nest. Why couldn't I expect even larger swarms than from a regular 10-frame hive?

Picking Citrus Fruit in the South.

As has been shown, the 10-frame hive-body is too small proportionately, and is prohibitive of rapid manipulation, especially where there is much propolis. Nor does a 10-frame super make an ideal storing department for my locations, for it takes the bees too long to fill outside frames or sections, and by the time they do, the middle comb is travel stained. Such is not the case with an 8-frame super. It is filled much more quickly and evenly.

In some of my locations where there is a slow honey-flow, bees store but little if any in the supers above a 10-frame brood-nest, and when they do, they fill a comb at a time, or start on one side and fill one section at a time, as if plowing a field. The result is anything but satisfactory. I have bees in many different locations in the South. I have tried 10-frame hives in all of them, and they are not satisfactory to me.

Diseases of Bees.

Foul Brood

BY J. E. CRANE,

Vermont State Inspector.

The greatest drawback to successful bee-keeping at the present time is *foul brood.* There are large areas of our country that are free from disease, and others where there is but little disease; and yet I fear that there is more in many localities than we now suspect. Over most of the northern States inspectors have been appointed, and are working each in his own way with but moderate success. There have been conventions of inspectors to discuss the best methods of combating the evil. While such gatherings are good, they are often at such a distance that many inspectors find it difficult to attend.

I have been wondering if a department of one of our bee journals might not be profitably used for the interchange of opinions among inspectors, for the discussion of many points of interest connected with inspection work. I believe our methods for the production of honey, either comb or extracted, are up to the standard of what they should be, and it is comparatively easy for one to get information.

But when it comes to foul brood, especially European foul brood, how many questions I should like to ask some person with more experience than myself as to the best method of meeting the various problems that come to an inspector or the enterprising bee-keeper! Shall the work of the inspector be educational rather than simply to suppress the disease wherever he may find it? If the latter I fear it may not prove of much permanent value, as to do so would often destroy every colony in a given district. To teach the bee-keepers how best to combat the disease, although slower and requiring more patience, may in the long run produce better results. Some respect should be paid to the intelligence and interest bee-keepers take in the subject themselves.

Two bills were introduced into our Vermont Legislature during the past session for the suppression of contagious diseases among bees. One was an amendment to our present law that made it the duty of the inspector to visit each yard where disease was found, in 20 days from his first visit, and burn every diseased colony found. If he did not do it, he should be removed and another inspector appointed in his place. This because it was thought the inspector had not been severe enough. The other bill was introduced from another part of our State, repealing our present law for its severity, and a new bill introduced, allowing the inspector to make but one inspection, and that only before the first of June. This because the inspector had been too severe. It was necessary to appear before the agricultural committee and see that neither bill was reported favorably. We have a very good law as it is, and if bee-keepers will co-operate with an intelligent inspector, our State may in time be made comparatively free from disease.

What is the most practical method of disinfecting hives or tools with which we have opened diseased hives? I have heard that some thought it necessary to boil tools in water for half an hour before going to another apiary. Yet it would seem that disinfection of tools was often quite as necessary in going from one hive to another. The boiling method, no doubt, is sure, but requires so much time it is doubtful if it is often followed, or even practical.

Is it ever safe to put one colony into a hive where there has been disease without first disinfecting it?

How much dependence can be placed on Italian bees to control or subdue European foul brood?

Is it safe to change comb honey supers from a diseased hive to a healthy one?

Are queens ever of any value that have been reared in a foul-broody colony?

Where shaking is resorted to, is it necessary to shake on frames of starters as most inspectors advise? Why not just as well shake into an empty box and save time and bother?

Does European foul brood spread in any other way than through the diseased honey, and if so how? We know it moves more rapidly than American foul brood, but why? Can any one tell us? These and other questions come to me as I think the subject over. Each individual inspector has experiences that will often throw light on something of which another can get no clue.

The Agricultural Department at Washington has given us a great amount of technical knowledge of brood diseases, and the question how to put into practical work the knowledge we now have is of great importance.

Middlebury, Vt.

[The foregoing article has struck us as so timely and judicious that we use it to open a department hereafter to be known as "Diseases of Bees." Mr. Crane is one of our oldest and most practical apiarists. We find his name in the American Bee Journal as far back as 1879, when he was president of the Addison County (Vt.) Bee-Keepers' Association. He could already give good advice, and was probably then an up-to-date bee-keeper. We urge apiary inspectors from everywhere to bring their experiences to this department. We want short, pithy statements, so the reader may get at the facts without loss of time. The disease question is a serious one.—EDITOR]

Illinois State Inspection

BY A. L. KILDOW, CHIEF INSPECTOR.

On entering on my work as State inspector, I found that the inspector who served before me kept no records, and I had to make a new start.

First, I sent letters to different sections of the State, enquiring if disease was known in those parts. With the replies and information from other sources I started out. As conditions became known, and the work broadened, I hired deputies as needed, until last season I had 10 deputies doing more or less work. There is need of more, but our funds will not permit. Thus we are handicapped to a great extent. In appointing deputies in different parts of the State, I aim to cut down expenses, and consequently they are not expected to go far from home.

The work of the inspector is mainly educational. It is his duty to teach the bee-keeper how to detect the various bee-diseases, how to treat them, and to so instruct him that he may know the first symptoms of disease should it appear in his apiary.

The amateur is the most needy, as his eyes are not trained to detect symptoms that would cause a colony to become worthless. There are many little points that the inspector can give to the amateur that otherwise would take him years to learn, and the sooner he can be educated the better. The inspection work has also been handicapped because we had to act the detective, and hunt up the bee-keepers. As a rule, they have not co-operated with us. Many appear to be afraid of the inspector, and would rather not have their bees examined, for fear disease might be found, and they would have to clean up, and the thought of having to clean up is a "bugaboo."

This only applies to the small bee-keeper and the farmer, who thinks he has all he can do without (as he says) fooling with the bees. As a rule, we have no trouble with the man who tries to make something out of his bees. He is willing to learn. The specialist knows that he must keep his colonies in good condition or he is the loser. If he has never had disease in his apiary, he is posted as to what it is, and it is not likely to make headway before he discovers it, and he makes short work of it.

On July 24, I visited the home of a man who had opposed our foul brood law, and who is one of Chicago's large bee-keepers. I had heard that he would serve an injunction on me if I came on his place; but for all that I made the visit. When I arrived at the house I found him in the midst of extracting, and very busy. Instead of serving an injunction, he treated me with as much respect as I have received at the hands of any bee-keeper. His plan in the treatment of foul brood is: In the spring he goes through all his colonies (in May), and every colony that shows even a single cell diseased is marked, and if it is in the out-yard it is brought to the home yard, and there looked after. Every colony is shaken, and the honey extracted and the combs melted. While he may never get entirely rid of foul brood, he will so keep it under control that it will not materially injure him. Before I left, he told me that if I could come back the last of the week he would have more leisure, and would take me around. The bees in his home yard are a good grade of Italians.

Bee-keepers in general should keep better bees. With disease all around them they must be up to date in everything pertaining to bee-keeping, if they wish to realize anything from their bees. Very few places are overstocked with bees. My own locality comes the nearest to it of any that I know; perhaps this is because I am better acquainted with my own neighborhood. I do not believe I am over-stating when I say that ten times as many colonies could be kept in Illinois at the present time, and kept to advantage. Besides keeping more bees and better bees, we are advised to keep our bees better.

This need was plainly demonstrated to me by finding bees kept in every conceivable way, some in plain boxes, others in boxes with slats nailed in top and bottom, some in good frame hives with no foundation, and the

WHERE SAGE, SUMAC, WILD BUCKWHEAT AND ORANGE BLOOM, AND COOLING OCEAN BREEZES BLOW THROUGH MOUNTAIN PASSES WILD.
Nature blessed this land of ours with sunshine, rain, fruit and flowers.—L. L. ANDREWS.

combs built crosswise, some in barrels, and in one case an old trunk was used. I did not go into this. The condition of the bee-yards varies as much as the hives.

Besides the regular inspection work and treatment, it is the plan to have as many demonstrations or "field days" throughout the State as the conditions will justify. In my opinion, this is the practical and educational part of inspection, and I earnestly ask all bee-keepers for their hearty co-operation.

Putnam, Ill.

CONTRIBUTED ARTICLES

Spraying Trees in Bloom

BY H. F. WILSON,

Assistant Entomologist, Oregon Agricultural College.

MR. W. H. VOLCK, Horticultural Commissioner of Santa Cruz Co., Watsonville, Calif., in the January number of Better Fruit, under the heading of "Caterpillars, Codling Moth, Aphids," pages 16 and 17, makes the following statements: "Owing to the very early attacks of tussock caterpillars, canker worms and leaf folders, the first sprayings should not be delayed until the blossoms have all fallen, but applied while the trees are in bloom. The period from full bloom to the time when two-thirds of the blossoms have fallen *appears* to be the most practical timing. *Spraying with good arsenicals will cause no injury to the blossoms.....* Apply the first spraying when the trees are in full bloom to the time when two-thirds of the blossoms have fallen."

Note that he states that the time mentioned *appears* to be the best. This recommendation, which is undoubtedly given on reliable data and experiments, is a very dangerous one for both the bee-keeper and the horticulturist. Certainly such a practice causes the destruction of insects which feed upon the nectar of the blossoms, and climbing over them in search of it, aid in pollenization. In localities where it is followed the honey-bees will be destroyed. One of our local bee-keepers suffered such loss from the spraying of a single orchard that he was compelled to move to a different locality.

It is a common recommendation of this station to suggest bees for the orchard and farm, both for cross fertilization of fruits and the surplus honey. In view of this recommendation, I will state that in Oregon we have the tussock moth, canker worm, and several caterpillars which cause more or less damage to the fruit, but only in one instance have they caused enough damage to make it necessary to consider methods of control other than those now in use.

In localities where it becomes necessary to combat these early-feeding caterpillars, the spray should be applied *before* the blossom buds open. At that time the young caterpillars will be more easily destroyed than a week or 10 days later. There may be some opposition to this extra application on account of the cost, but surely the value of the cross-fertilized fruit over the self-fertilized will be more than the cost of spraying.

Just how much we can depend upon the wind and air currents for distributing pollen is hard to say, but several investigators have carried on experiments which tend to show that not as much pollen is distributed in this way as one would expect.

I suggest that the fruit-growers of every State be careful about spraying when the trees are in bloom.

Corvallis, Oreg.

* * *

The Iowa Program

BY FRANK C. PELLETT.

Iowa State Inspector of Apiaries.

THE Iowa State Bee-Keepers' Association bids fair to become one of the strong organizations of its kind. The members are live wires, and propose to place the bee-keeping industry on a par with other agricultural pursuits in Iowa. Lack of organization has given the impression that bee-keeping is at a low ebb. But the census shows nearly 30,000 bee-keepers on the farms of Iowa. Those occupying less than three acres, the limit set by the census bureau of the smallest area composing a farm, were not reported by the census enumerators.

As a result, while more than half the number of persons keeping bees was reported, probably not much more than half of the number of bees and product is shown in the census figures. Many of Iowa's largest honey-producers live in the towns and occupy less than three acres of land. Any business in which 40,000 people are engaged, even in a small way, is worthy of more attention than has been given by the State of Iowa.

Nothing is being attempted at this time by the association that all members present at the convention did not agree upon. The things that are now being urged are:

First, an appropriation of funds for bee inspection, to be administered under the direction of the State Entomologist. It is believed to be the best plan to take the appointment of inspectors and administration of the funds of the office entirely out of politics.

Second, the establishment of a chair of bee-keeping at the agricultural college. The authorities of the school favor this move, and it might have been done before had there been any outside interest apparent to justify it.

Third, the employment of a lecturer on bee-keeping on the extension force to appear before farmers' institutes and other assemblies. This has already been done temporarily by the appointment of C. H. True, of Edgewood, for the present winter season. It is expected that a regular lecturer will be permanently employed before long.

Fourth, the passage of a law prohibiting the shipment of bees from other States into Iowa without a certificate signed by some authorized inspector, showing that they are free from disease. The Peterson bill, now pending in the Legislature, carries this provision.

Fifth, better premiums and better facilities for exhibiting at the State and County fairs. The secretary, acting on instructions from the convention, has already written to the secretary of every county fair association, calling attention to the fact that bee-keeping is not receiving the attention it deserves at the fairs, and suggesting a premium list suitable for such exhibitions.

Good results are expected from this campaign. A committee was also appointed to confer with the State Fair board regarding the exhibits at the State Fair. We expect favorable attention from this body, and hope that a separate division of bees and hive products will ultimately be established with a satisfactory place for exhibition

L. L. ANDREWS WITH COMBS OF HONEY READY TO GO INTO HOUSE FOR EXTRACTING.

of our products and a creditable premium list.

As fast as these results are attained others will be attempted. A bulletin is now in course of preparation by the Agricultural College devoted to opportunities for bee-keeping in Iowa.

The Iowa bee-keepers welcome scientific bee-keepers, and desire them to join the association. We fear no competition from this kind of men, and feel that our interests are mutual. On the other hand, we already have several thousand too many shiftless bee-keepers who have a few colonies in a fence corner where the weeds grow 10 feet tall, and which are not examined from one year to another. Such colonies serve to breed moths and foul brood sufficient to keep the careful man on the anxious seat all the time.

Watch the Iowa association move into the front row. Every bee-keeper worthy of the name owes it to himself, and the cause of honey-production, to join the society and lend his influence to the work outlined.

Atlantic, Iowa.

Dead Larvae Among Live Brood

BY D. W. MILLAR.

IN THE February Bee Journal, comment is made editorially on "Dead Larvæ Among Live Brood," and "Causes of Many Eggs in a Cell." Now, strange to say, I have a similar case of each in the same hive. The dead brood has bees hatching all around, apparently healthy, also eggs and unsealed brood in adjoining cells. I have already sent a sample to Washington just as described. The dead brood in this form is not uncommon with me, but never has been fatal, and the temporary weakness is in time overcome and the colony none the worse. It occurs more in weak colonies or nuclei that I am building up. There are no symptoms of foul brood so far as I can see, and the department at Washington may be familiar with the cause.

In the hive from which the sample of brood was sent, I at first thought the queen was missing and that a laying worker had developed, as many of the worker-cells contained from two to four eggs, but there were no eggs at all in the drone-cells. Not caring to unite until I had heard from Washington, I decided to try the shaking plan to get rid of the laying worker, but was not thoroughly satisfied that there was one, so I took a seat and prepared to make a thorough search for the queen once more. She was found, and was to all appearances a fine one. The colony I built up from a nucleus reared and mated the queen, and since the nucleus was formed there has never been a change of queen, and she has never stopped laying, to my knowledge. Cells with more than one egg are to be found not only on one frame, but on nearly every one where there are eggs at all.

Might not this be a very prolific queen, and, being weakened, the colony is short of bees to clean up and look after a larger brood-nest, and she just cannot help laying, so gets rid of the overflow by doubling them up? When seen, the queen would give one that impression, as she seemed to be fertile, and there were no drones at all in the hive, and young bees, as I say, hatched all around the eggs, dead larvæ, and unsealed brood. The drone-cells, of which there are a few in the hive, have no eggs whatever in any of them. I will not worry about the queen, for I believe that when other things are adjusted she will be all right; but the dead brood has had me a guessing for some time.

Bartle, Oriente, Cuba.

[This may or may not be the same as Mr. Townsend speaks of. Even if it never proves fatal, it must weaken a colony. Please let us know if you learn more about it. The duplication of eggs, as you surmise, probably has nothing to do with the disease.

You speak of *a* possible laying worker. When this nuisance appears it does not appear singly, but in numbers.

The following letters refer to similar facts. Evidently, when disease is found the bee-keeper should not at once conclude that foul brood is present. In reporting these cases it would be well for the bee-keepers to make note of the conditions otherwise, whether in time of scarcity of crop, and whether the colony has plenty of stores. The assertion of some writers that sometimes the nurses are stingy and do not feed the brood sufficiently might have to do with some of these cases.

The evidences are more and more in favor of the Italian bees of pure race: —EDITORS.]

I had some experience with dead larvæ among live brood last summer. It was a colony with a black queen. About one-half of the brood was dead. The queen was put on trial and convicted, and death sentence passed. I sent for an Italian queen, which arrived about the middle of June. The black queen was killed, and the new one introduced, and in a week or 10 days the dead brood was all cleaned out and the combs filled with nice, pearly brood. I don't know the cause, but I hit the remedy.

Festus, Mo. S. B. REYNOLDS.

About dead brood in one colony and none in the other. We had the same thing in our apiary last summer. The brood was scattered all over the combs of the affected colony. Some of the cells were filled with brood and some not; some dead and others alive. We became alarmed and moved every comb that had brood from the hive and gave other brood combs, but to our surprise the same thing happened over again. Then I thought it was owing to lack of bees, as the colony was not very strong, and I watched and found this to be the case. I then sent for another queen, put her in the hive, killed the old one, and took all the brood from the hive, giving half sheets of foundation instead. The new queen commenced to lay in three days after we put her in. The colony drew out the three frames of starters, the queen filled everything with eggs, and we had no more trouble with dead larvæ. We think it the fault of the queen.

Ottumwa, Iowa. GREGORY & SON.

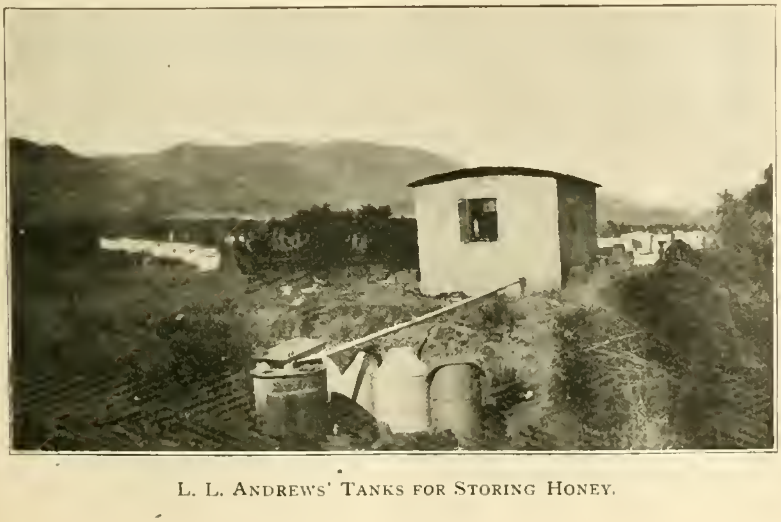
Concerning dead larvæ among live brood, this is a seemingly natural trouble. I have it to contend with here in my section. Your quotation from Mr. Townsend would be a fair description of the conditions as they exist in my apiaries during April, May or June. I think this trouble is partially or nearly cured through an application of daily feed, and I believe breeding from colonies that seem to be free from the trouble would come nearer to a permanent cure. B. A. ALDRICH.

Smithland, Iowa.

No Glucose in Bee-Candy

BY W. S. PANGBURN.

I NOTE with interest that the New York bee-keepers object to the use of glucose in bee-candy (page 58), and they are right. I never read about that "new discovery" of making bee-candy, using part glucose, but what I feel like getting up and saying *No*. It would be a slur to the industry. Pure honey and pulverized or



L. L. ANDREWS' TANKS FOR STORING HONEY.

granulated sugar, or loaf sugar, have given general satisfaction.

I have bought quite a few queens, some of them coming long distances, and they were received all right, so far as candy was concerned.

If we use glucose for bee-candy, and bee-keepers adopt it generally, the next thing will be a big advertisement in the Ladies' Home Journal, or some other periodical, setting forth the good qualities of glucose, and stating that bee-keepers are using it in place of honey in making bee-candy, showing they realize its superiority over honey.

Brother bee-keepers, let us keep a clean record, and for the good of our business don't mix up with one of the worst things we have to contend with and give any chance for censure. The glucose people are very keen to grasp these ideas, and would want nothing better in the way of an advertisement than to state that we were using glucose in place of honey in making bee-candy. Let us gently lay it on the table.

Center Junction, Iowa.

[This is right. It is well known that glucose is neither acceptable nor healthy for the bees. For wintering, or for spring feeding, if no good honey is to be had, the best sugar is none too good. For mailing queens, glucose would be deadly.—EDITOR.]

Save Your Beeswax

BY G. M. DOOLITTLE.

WHILE the production of honey is made the special object in keeping bees, especially in northern latitudes, yet in every apiary enough wax may be obtained to total a handsome figure in four or five years with but little more effort than to allow it to waste. Notwithstanding this, many who are keeping bees allow this wax to be lost, or, worse still, become a breeder of the pests that torment the apiarist who is trying to keep his apiary free from the wax-moth.

Bur and brace combs are a nuisance when frames are handled and the sections put on and taken off. Every one who is "booked" for a successful bee-keeper will remove these wherever seen in any manipulation of the hives, and especially when preparing supers and hives, for the next year, which were used the season previous. As these are trimmed from frames, honey-boards, etc., they should be carefully preserved, as well as broken bits of comb, and all drone-comb which is cut out to prohibit the useless rearing of drones from scrub or grade mothers.

Then, bees perish often during the winter, or there may be combs which from crookedness, or because they are made up largely of drone-cells, or contain much pollen, or damaged by mice, are unfit for use again. In all such cases, the wax the comb contains should be secured by rendering.

Convenient places should be at hand for the storage of all these pieces of comb and wax, both in the apiary and honey-house, so that there will be no necessity to drop or scatter them about. I have a little box in the seat carried with me, when working in the apiary, so that it is just as easy to drop all bits of wax and comb in this as to drop them on the ground. In this way I preserve any wax which may be trimmed from frames, combs or honey-boards. Such pieces are especially valuable, for they are composed almost entirely of wax, and the rendering of them is easy. It is well to keep these and all other comb to be rendered, away from moisture and light until the operation can conveniently be attended to. The rendering of bits of brace and bur comb, and other comb in which no brood has been reared, is a comparatively simple matter, since they contain nothing to prevent the wax readily separating from the residue, but with combs full of cocoons, bee-bread and other foreign matter, the case is different.

For comb which contains little foreign matter, the solar wax-extractor is a great convenience, as it takes all unpleasantness out of the house, shop or honey-house; is handy to drop all bits of wax and comb into, and if a cloth strainer is put over the place of the discharging wax, it comes forth ready for market. For the rendering of combs containing cocoons, pollen, etc. (and those without cocoons need not be excluded), I have found nothing (after having tried everything readily at hand for the average bee-keeper) better than the following:

Take a common cast-iron kettle, such as is used by nearly all farmers for heating water, boiling vegetables, etc., for the hogs or hens, one that will hold several pails of water; set the same on three stones, or three pieces of gas pipe or bars of iron driven in the ground, so as to raise the lowest part of the rounding bottom of the kettle 3 to 6 inches from the ground. Now fit two or more pieces of plank or board (nailed so the grain of the timber in them runs crosswise of each other) so that a rounding surface is made to fit the inside rounding bottom of the kettle. With a coach or lag screw, these fitted planks are screwed to the end of an "upright" made from a pole 5 or 6 feet long, or from a 2x4 scantling, the upper part of which has holes bored in it 4 or 5 inches apart. Get a pole or scantling 16 feet long, and mortice a hole through it 3 or 4 feet from the larger end (if it be a pole), so that it will admit the upper end of the "upright." Next bore a hole through the pole at mortice, so that a bolt of iron will go through it and any one of the holes in the upright, when the same is inserted in the mortice. Drive an iron stake into the ground 3 or 4 feet away from the center of the kettle as it stands on the stones or iron stakes, to the top of which is attached a trace chain, which chain is to be attached to the large end of the pole when we are ready for it.

Fill the kettle half or two-thirds full of water and build a fire under it, and while waiting for the water to boil get a burlap sack which will hold 3 or 4 bushels, into which place the old combs, and tie the mouth of the sack securely. Some think that if these old combs have been soaked in water 24 hours they will render better, while others hold that such combs should be pounded up fine; but after repeated trials I am led to believe this to be a loss of labor.

When the water in the kettle boils, slowly lower the sack of combs into it, and as soon as melted, "work" the sack one way and the other with an old hoe, and watch the wax rise. If all the comb is not in the sack, raise the upper end, untie, and fill until all has gone into the sack. Working in this way, the whole mass of combs will be reduced to a bushel or so of refuse, when the sack is to be tied down as closely as possible.

Now put the plank end of the "upright" on the sack, the upper end in the mortice in the pole, the iron pin in the right place or hole, and the chain attached to the anchor iron over the big end of the pole, when by bearing down on the small end you can press the last particle of wax out of that mass in the burlap sack, as you "rock" the upright this way and that by carrying the small end of the pole one way and the other, thus bringing the upright to bear, under the great pressure, on every particle the sack contains.

Having all the wax out, hang a weight on the small end of the pole, let the fire go out, and the next morning take the cake of wax from the whole top of the kettle. Its thickness will be in proportion to the amount of comb you had to render.

To prepare the wax for market, try this: For every 10 pounds of wax, put in a suitable sized vessel, allow two quarts of water and one pint of good vinegar, and when the whole is melted over a fire, strain through common cotton cloth into the vessel you wish to cake it in, keeping the latter vessel where it will remain warm enough to keep the wax liquid for four or five hours. Just watch it a moment, and you will see that the whole mass is moving or working and stirring about, which it will keep doing to a lesser and lesser extent as it grows colder. In this way all particles of dirt which the strainer did not remove will be found on the bottom of the hardened cake, from which it can be scraped with a dull knife.

If you wish something fancy, have several tin molds made which will each hold a 2-pound "brick," and when you have it all in this way, you can pack it in a square box, each cake wrapped in a sheet of butter paper, the same as they do "prints" of butter when you can get a fancy or "gilt edged" price

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for it. If you try this way of saving, rendering, and putting up wax for market, you will never allow more to go to waste, and may find enjoyment in the work, far beyond that of sitting down in the "country store" talking "idle gossip."

Borodino, N. Y.

European Foul Brood

BY DR. C. C. MILLER.

A CORRESPONDENT desires the latest wrinkle in the treatment of European foul brood. The styles for 1913 will be much the same as for the past year. There are, however, new members of the Bee Journal family who need information on the subject, and, alas! some of the old members may find their premises invaded for the first time this year by the dreaded visitor. So it may be well to discuss the subject in a sort of general way.

First and foremost, have only strong colonies. A strong colony may resist an attack where a weak one succumbs. So if the disease is in your vicinity, or within a few miles, and you dread its invasion, *keep* all colonies strong. Anyway, *this is a paying thing to do if there were no disease within a thousand miles.* After the disease has made its appearance, you are sure to have weak colonies. After being attacked by European foul brood, it is only a question of time when the strongest colony will be weak. Little use to attempt any treatment until the colony is made strong, either by the uniting of two or more affected colonies, or by the giving of sealed brood or bees from healthy colonies.

Second, if your bees are not of the best Italian stock, introduce that kind. It is now quite generally agreed among foul-brood inspectors that the worst ravages of the disease occur where black blood predominates, and that a strong factor in either prevention or cure is the introduction of Italian blood. Some, however, agree with J. E. Crane, who gives it as his opinion, Gleanings in Bee Culture, page 85, "that the ability of bees to resist disease depends more upon their strength and vigor of constitution than the color of their abdominal rings." Even so, it still remains true that in the great majority of cases there will be an increase of strength and vigor of constitution where black or hybrid blood is succeeded by best Italian blood. Indeed, Mr. Crane immediately adds to the words already quoted, "On the whole it now looks as though the introduction of vigorous strains of Italian bees might, in skillful hands, prove a short cut in curing European foul brood."

Suppose, however, no matter what the quality or condition of your bees, that the appearance of the brood is such as to make you suspicious. The first thing to do is to send a sample of the suspected brood, perhaps a comb 4 inches square, to Dr. E. F. Phillips, Agricultural Department, Washington, D. C. If you write him in advance, he

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will send you a tin box in which to mail the sample, and it will cost you nothing for this, nor for what he does for you afterward. After analysis he will give you expert opinion as to what is the matter, if anything, and probably add instructions on what to do.

SHALL THE COMBS BE SAVED?

Turning now especially to my correspondent, I suspect the question you want answered is whether it is advisable to use the same treatment for European as for American foul brood, destroying all combs, or whether it is better to use the Alexander treatment, or some modification of it, without destroying any combs. Good authorities have been very emphatic that the former is the only course advisable, considering the danger that ignorant or careless bee-keepers might by the latter course spread the disease rather than stamp it out. I have no quarrel with any one who thinks this the safer plan. It certainly is *safer*, at least in the hands of the careless. And it would be safer still not only to burn up all brood and combs, but to burn as well all the bees, hives—everything.

Indeed the time was, when that was the only treatment considered advisable for American foul brood, to burn up the whole thing, lock, stock, and barrel. Yet nowadays no one advises to destroy, in all cases, hives and bees; although it might be advisable if only a colony or two in the neighborhood were affected. But such localities are getting to be more and more scarce all the time, and the effort is made more and more to control the disease rather than to stamp it out entirely. So if it be the right thing to save the hives and bees, why not save the combs also if we can?

When the combs are destroyed, it is not the mere waste of so much valuable material. The heavy set-back to the colony from having to build up anew is a matter of greater consideration. Destroy the combs and you can count on little from the colony for that season; whereas if the combs be left, you may have a fair surplus.

ALEXANDER TREATMENT.

If you decide to save the combs, you may adopt the Alexander plan of treatment. *Make the colony strong.* Kill the queen. In 10 days kill all queen-cells. In 10 days more give a ripe queen-cell of best Italian stock, or a virgin just hatched of the same stock. When brood from the new queen appears, it will be healthy. This makes a break in brood-rearing of about a month's duration.

MODIFIED ALEXANDER TREATMENT.

Good results have been obtained without so long a break in brood-rearing. Instead of a queen-cell or a virgin just hatched, a laying young queen may be given about 20 days after the removal of the old queen. Another plan, greatly shortening the period of queenlessness, has proved well worth trying. At the time of removing the old queen, or as soon thereafter as the bees will accept it, let a queen-cell or a virgin just hatched be given. This ought to make a break in brood-rearing of not more than 10 days. Besides the shorter time of queenlessness, there is the advantage in this case that the bees do not have the discouragement of being hopelessly queenless, and there is reason to believe that this discouragement is no help to the colony in cleaning up the disease.

CAGING THE QUEEN.

The instruction has been to kill the old queen. Instead of being killed she might be used elsewhere, but for the fact that generally a queen does not do good work after she has been for some time in a colony badly affected with European foul brood. In a very mild case, however, the queen is likely to be still as good as ever, and as the only object in removing the queen (unless she be replaced by a better one) is to stop the rearing of brood, there is no need to remove her at all. Simply cage her in the hive for a week or 10 days, and then release her. Even if a certain percent of cases thus treated should be failures, the simplicity of doing nothing more than to cage the queen for a few days may be preferred to a surer plan involving several times as much trouble.

RECURRENCE OF DISEASE.

The question has been asked, "How long does it take to get rid of the disease entirely?" Perhaps no one can answer that question with any degree of positiveness. It has been said that European foul brood is more persistent, more difficult to eradicate entirely than the American variety. Speaking of foul brood and probably referring to American, E. D. Townsend says in the Bee-Keepers' Review, page 45: "Once in a locality, always in that locality. One can free a hive of the disease, very probably a yard, but not a locality of any considerable area." If that be true of American, it is more emphatically true of European. No matter whether the combs are all destroyed in the treatment of the disease, it is likely to appear again. Yet with proper watchfulness there need never be any bad case, and good crops of honey may be obtained in spite of it. In the apiary of the writer a single diseased cell is considered warrant for treatment, so there can never be any very bad case.

It should be mentioned, however, that a very little of the disease is bad in its effects, for a colony very lightly affected seems to fall behind another entirely healthy colony to a larger extent than one would suppose possible from so small an amount of the disease.

Marengo, Ill.

Color of Queens

BY C. P. DADANT.

DR. KRAMER holds that the color of queens is lighter when they are reared from a young mother; that the queen gets darker in color as she grows older, and that her progeny is therefore also darker.

He holds that the soil of a country has an influence upon the amount of mineral contained in the honey, and that it thereby influences the color of the bees. A soil rich in potash will produce lighter colored bees (according to one of his commentators, E. Van Hay). What do our queen-breeders have to say about this? Some of them who have reared queens largely both in the North and the South ought to have an opinion based upon experience.

Is it a fact that a queen reared in a very dark cell will be in general darker than one reared in a lighter colored cell? Or is this because the light-colored cells are built at the time of the greatest crop and in a favorable season?

The above enquiry was put in type and a proof-sheet sent to a number of queen-breeders with a request to give

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their opinion and their experience. The following have replied kindly to our request, for which we express our thanks: J. A. Simmons, J. P. Moore, Grant Anderson, W. J. Littlefield, A. B. Marchant, Frank F. France, Quirin-the Queen-breeder, J. M. Davis, T. S. Hall, and J. J. Wilder. It would take too much room to give all the replies in full, so we will summarize them and quote only extracts.

All agree that a queen gets darker as she grows older, but not one thinks that the daughters of a young queen will be lighter colored than those of an old queen.

J. A. Simmons says: "The inexperienced will often be surprised at having produced both light and dark queens from eggs from a evenly-marked queen.

"A queen is darker as she grows older, I am free to admit. But I have had such a liking for some good breeders that I continued to use them as such, after they had become so poor as to egg laying that they required brood from other colonies to maintain their colonies' normal condition, but the last queens reared from them were just as prolific and as light as the ones first reared."

Frank F. France says: "I have noticed that a queen just hatched from a cell that has been chilled has a darker tip to the abdomen."

Likewise Quirin writes: "A light or dark cell, light or dark honey, light or dark pollen have influence towards producing either lighter or darker queens, yet said influence is so extremely light as not to be noticed for several generations. Temperature has a far greater bearing on the color proposition than either food or color of the comb. Queens hatched in a low temperature may be good sized, etc., but will be darker than if hatched at a higher degree."

As to the effect of the soil upon the color of the bees and of the honey, France thinks it may affect the honey but not the color of the bees. Marchant says: "I believe that queens reared in the North are brighter than those reared in the South, and possibly it is the soil that causes this, as the lands in the North have more potash than those of the South."

W. J. Littlefield says: "The soil may or may not influence the color of the honey, but I am sure the honey has nothing to do with the color of the queens; if it did, in early spring when we feed back to the bees the dark honey that is not fit to put on the market, we would get very dark queens; then when we feed white sugar syrup we would get much lighter-colored queens. The color of the honey, however, has quite a little to do with the color of the wax, the darker the honey the darker the wax will be." (This last proposition, which is out of the present subject, deserves a special discussion.)

Grant Anderson has "kept bees on many kinds of soils, and has never noticed any change in the color of the bees."

J. A. Simmons says: "As my queen-rearing experience has been confined to soils of a like nature, I cannot deny Dr. Kramer's statement. This is more chemistry than I have applied to queen-rearing. But would not this difference, if correct, also affect the color of persons eating this honey? Ladies, be careful or you may change your color, or be sure to get the kind of honey that will produce the desired effect. Queens alike in color and size may be produced from either light or dark cells under favorable conditions. It will be noticed that, very early or late in the season, when there is but little honey coming in, colonies made queenless and compelled to rear queens produce smaller and darker queens, in cells started from dark cell-cups about the combs, as if they were made from bits of wax gathered from the combs already built, and not of their own secretion. Therefore, it is my opinion that the season, rather than the color of the cells, makes the difference in the color of queens."

T. S. Hall says in part: "There is a marked difference in the color of some queens, when the cells are allowed to get chilled or the temperature goes below the normal. This we know, for we have left cells out all night and put them the next morning where the bees could impart the necessary heat, for the hatching of the queen. The different colors of pollen also show in the golden bees and queens. Pollen gathered from sumac gives the light bees and queens a golden rich color."

J. J. Wilder says: "I am inclined to take side with Dr. Kramer as to the color of queens and their progeny being affected by the soil, or even by the atmospheric condition of a country. I believe this will explain also why a queen and her progeny gradually darken in color as they grow older. This only applies to our rich colored Italian stock which is bred up for color. My opinion is based on experience from the high mountainous section of Georgia to the low sea level section of Florida. I have always noticed that a bright colored Italian queen and her progeny gradually darken in color, but never thought of bringing the matter up for discussion.

"The color of our Italian stock is far more easily maintained on the high and dry ridgy sections of Florida and the mountainous sections of our country. This land is rich in potash. Our principal honey plant in the high section is the partridge pea, and it grows prolific and yields nectar only on land rich in potash. On the other hand, on the low, level land of middle Georgia, where my bee-business is located, and the soil is rich in lime, we cannot maintain the color of the Italian stock. In fact, it is astonishing how fast the color darkens. The same conditions prevail along the low, flat, sea level land of Florida, where the atmosphere is very heavy and salty. There the yellow bands of the Italians are so dull in color that they can hardly be detected.

"My apiaries on the high land of Florida are stocked with very beautiful colored Italians. I found this stock there, and it has reproduced itself up to the present. Very often a queen and her progeny come out away ahead of the others in color. My apiarist calls them our $20 queens, and points them out to me as we go over the apiaries. When I return a few months later, and ask about these extra-fine colored queens and bees, the apiarist remarks that they have fallen off some in color. But they never change to dark-colored Italians. They are always bright, and only lose a little of their extra brightness.

"In conclusion, let me say that this is a very important question, and if solved will prove a great help to our industry."

We insert Wilder's letter in full because it brings out a point worth considering. The bees of a bright $20-queen darken in color at different times. Is not the honey contained in their honey-sac at the time responsible in part for this? Years ago both A. I. Root and the elder Dadant called attention to the fact that the yellow bands of the Italian bees are more or less transparent, and that the color of the honey harvested by them influences their appearance without changing their color.

The sum of the replies indicates that queens are possibly darker when reared in unfavorable seasons. That is probably why darker cells have been thought to produce darker queens.

As to the unanimous agreement that queens get darker as they grow older, is it not possible that this darker appearance is due to the loss of the downy hairs of youth and not to an actual change of color? Very old queens are always hairless and shiny, looking therefore much darker than the young ones.

We believe this question is worth discussing on account of the all but unanimous desire to secure bright queens as well as prolific ones.

LATER.—Here is an additional contribution to the same subject which gives new ideas. Mr. Frohliger uses some very plain, common-sense talk. We already know that honey from different localities is of different colors, sometimes coming from the same kind of plant.

"The color question has always been one that bee-keepers would, as it were, go mad about. Personally, I have never been a stickler for color, and have had some of the goldens that were really a picture to look at and admire; but, oh! how they could use their sting; with more than a vengeance, too, and I was very glad to get rid of them without any extra charge.

"I firmly believe that climate, soil, location and surroundings have a wonderful effect upon the color, disposition, and general contour of our bees as well as upon the human family and

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domestic animals in general. 'Tell me your company and I'll tell you who you are and what you are.'

"The bees around San Francisco Bay, subject to the ocean winds, fogs, cold, etc., are more sluggish than they are near the central parts of the State, and away from these natural elements. Yes, I believe they have a tendency to get darker, too. Does not the sunshine have an effect upon those who are out in it all of the time, and will it not improve the color of an individual if he is always out in the sunshine and fresh air compared to one that is housed up all the time, and does not the skin and general complexion change accordingly? Why should not the soil, food and water have their effect upon the bees and their products?

"Why is it that the honey from the alfalfa raised in the valley is darker than that on the higher altitudes? Tell me why fruit that is produced in the valleys has a different color and flavor from that which is produced in the mountainous regions. If you do not know this, come out and visit some of the specialty shows, or ask some fruit-grower in the mountains and he will tell you with a great deal of pride, as well as satisfaction, and prove it, too, that the mountain fruit is the best in color, flavor, and general size.

"Here in California we have soils that are only adapted to almonds, walnuts and certain kinds of berries, but will not raise grapes and other fruits. Is it the soil only? I would say not, as climate and rain and other natural causes have their wonderful effects, and if you want to be a successful rancher, study the conditions of the soil, your climate, and then plant what is best. So it is with the bees, put them where they can get a crop at short range, and do not expect them to go 2 to 5 miles and do as well as those who must only go a stone's throw.

"Give me a strain of gentle bees with a good deal of *energy* and long tongues, and I will not look for color, but see how much honey they will gather and how well they will provide and guard their home. Take care of them and they will pay you back for every courtesy extended to them."

DR. MILLER'S ANSWERS

Send Questions either to the office of the American Bee Journal or direct to
DR. C. C. MILLER, MARENGO, ILL.
He does NOT answer bee-keeping questions by mail.

Overstocking—Honey-Boards, Etc.—Dividing

1. I have only had my bees about three years. The man I bought them from said he was selling off his bees and was going to Old Mexico, as that was a great bee-country. So I bought about one-half of his bees, and he went away and was gone about two years. Then he came back and began to increase his bees again. I have four apiaries now. One was doing fairly well, so he has just put in a big apiary about one-half mile from mine. We figure on 50 pounds per colony here. Now, what would you eastern bee-men think of being treated this way? It does not look to me like he or I will get very much honey by having the bees so close together. The locations for bees are about all taken-up here, I think. There are some new locations about 18 miles from here. This over-crowding does not look very encouraging to me. What do you think of it?

2. How is a honey-board made? Is it just a board with a bee-escape on the underside? Would it pay to use these for extracting honey; put them on in the afternoon before you expect to extract, and then just take off the supers and frames together, and wheel them into the extracting house?

3. Do milo maize or sorghum yield honey or pollen? They are raising a large amount of milo maize here.

4. Does any one know of something that could be sown in waste places where irrigating water runs, or where Bermuda grass now grows that would produce honey and also be good for the farmer? There are several places here where Bermuda grass grows, when it gets the waste water from the ranches.

5. Will bees draw out foundation as soon when it has been in the frame three months as they would if only in the frame three weeks? I like to put my foundation in the frame in the winter time, when I have plenty of time. This to be new foundation just made.

6. When is the best time to make new swarms? I worked with a bee-man one summer before I bought my bees. He made his new swarms when he was extracting. But I think it disturbs the bees so much when they are working hard, and it looks to me like they will not store as much honey if torn apart at this time. ARIZONA.

ANSWERS.—1. My thought about it is that this sort of thing makes bee-keeping a very uncertain thing to count on. Years ago I took the ground that if ever it was to be a reliable business, a man should have just as much right to his territory as the man who keeps cattle or other live stock. So far as I now remember not a single man expressed any agreement with me, although since then a good many have. There is quite a general agreement that a man has a prior right morally, although some do not even believe in that. But in matters of business, moral rights are not very reliable. I have a moral right to the possession of my horses, but if I had no legal right to them I doubt if I would keep them long. Some day bee-keepers may be advanced enough so that a man may be just as safe from interference in his bee-pasture as he now is in his cow-pasture. At present you have no redress, and must just grin and bear it—or else bear it without grinning.

2. Honey-boards were in use long before bee-escapes were ever heard of. A honey-board was one placed over the top-bars, with a bee-space between, there being in the board, holes or slots over which were placed surplus boxes. Latterly a board with an escape in it is sometimes called a honey-board, but it is better simply to call it a bee-escape. Opinions are divided as to using bee-escapes in the way you mention, some highly approving them and others not believing them worth while. I suspect that bee-escapes work better for some than for others, either because of the difference in bees or for some other reason.

3. I don't know. I should guess they would be good yielders of pollen at least.

4. I think sweet clover has been very successful in such places.

5. Speaking very strictly, I suppose the fresher the foundation is the better. But I have used foundation that had been fastened in four or five years, and I've some question whether the bees made any great difference between that and that which had been put in only four or five days. At any rate, I believe it good policy to get it ready in advance as you propose.

6. There is no fixed rule about it. One would think it best to follow Nature, and make increase at the time bees swarm naturally. But nearly every one agrees nowadays that natural swarming is decidedly detrimental to the honey crop. In my locality it seems much better to have no increase until at or near the close of the harvest. In some localities, where there is a heavy late flow, it may be better to divide early in the season.

Questions on Requeening, Increase, Etc.

1. I am running for extracted and comb honey. Before swarming seasons I place the queen and one frame of brood, and the balance drawn-out combs, in an 8-frame hive; over this an excluder with the rest of the brood in the upper story. In 9 or 12 days I cut out all the queen-cells, if there are any. Why not put the empty hive with the drawn combs on top without an excluder? Would that work just as well or would it cause more swarming?

2. Which is the simplest way, rear queens in nuclei, or requeen the selected colony by inserting a frame with queen-cells?

3. Is there any proof that bees sleep to a certain extent during a honey-flow?

4. As a rule, every bee-keeper has some weaklings in his yard. I don't care how much attention he gives them. To strengthen them what is your plan, to swap frames or go to strong colonies, give them a good shaking and leave them with the queen and one frame of brood in the hive on the old stand, and put the rest of the brood under the weak colony? Very likely there would be queen-cells started.

5. To melt up cappings and wax scraps, what would be the simplest way to do?

6. Do you think bees will rear workers, if shaken in a hive with a queen, in a full set of all drone-combs?

7. If given full sheets of foundation will there be any drone cells?

8. I bought 3 colonies of bees in box-hives at a sale for $1.35 each, and they were as heavy as lead. My intention was, a little before swarming season, to drum out the bees with the queen and make 2 colonies out of the parent colony. What would be the best thing to do?

9. In what way is the most honey gained by extracting, in 8 or 10 frame hives? I put on supers over double brood-chambers?

MISSOURI.

ANSWERS.—1. No, the excluder is an important part of the stunt. Without the excluder swarming would be hindered to a certain extent, but not as much as with the excluder.

2. It is much simpler to hang in the hive a frame with a queen-cell, or to put in a queen-cell without the frame. Only in that case you will have to wait 10 days to 2 weeks before the young queen begins to lay. You

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also run some risk that the young queen may fail.

3. I think that has been proven; but I can not now cite the proof.

4. Early in the season the former plan; at the approach of swarming the latter.

5. Use a solar wax-extractor.

6. I tried that once, and the bees wouldn't stay; swarmed out. In other cases, where there was an excess of drone-comb, they reared an excess of drones; but in some cases they narrowed the mouths of the drone-cells and reared workers.

7. None to speak of; but the bees are likely to find some little vacancy that they can fill with drone-cells. Practically speaking, however, there will be no drone-comb if frames are entirely filled with worker foundation.

8. You can do as you suggest, or you can wait until the bees swarm, hive the swarm on the old stand, put the old hive close beside the swarm, 8 days later move the old hive to a new stand, and 21 days after swarming, when all worker-brood has hatched out, break up the old hive and give the bees to the swarm.

9. Without any special care I should expect more from the 10 framer, because the colony would likely be stronger. With special management there may be no difference.

Increase Without Swarming

I have two strong colonies of bees; in each hive the brood-chamber is a double 10-frame brood-chamber, making 20 frames to each.

Now, I wish to know what is the best way to make "increase" of my bees? I would like to avoid the troubles of the usual swarming, and yet increase my stock.

ILLINOIS.

ANSWER.—Here is one good way: Operate a little before the usual time of swarming in your neighborhood; or, if you wish to take a little more pains, operate after queen-cells are started but before they are sealed, for with the first sealing a swarm is likely to issue. Set one of the stories on a new stand putting in it all the frames of brood with adhering bees, and leave the rest of the combs and bees with the old queen on the old stand. The hive on the old stand ought to give a good surplus in a good year, and if you want to make more sure of it you can brush back into this hive the bees from half the combs of the other hive. There is, however, some danger of a swarm as soon as the first young queen emerges. You can prevent this by destroying all queen-cells but one. Or, you may prevent it by dividing the brood into two parts, providing you want the increase.

It may be still better first to put all the brood in the upper story, with an excluder between the two stories and the queen in the lower story. Then, a week later, move the upper story to a new stand. In this case there ought to be no danger of swarming.

Improving Stock

1. I would like to know of some simple way to improve my bees, without taking too much time from my other bee-work. I produce both comb and extracted honey, but mostly extracted. I am surrounded by box-hive bee-keepers; no chance to get very far away from all of them. My bees are nicely marked Italians, but I do not know how they will compare with the best strains in the country. They were brought here years ago, and natural swarming has scattered them all over the country. There has been no new blood introduced since the start.

2. Will you tell me some simple way in which I can keep a record of my bees—I mean a record of queens, etc., to see if there is any improvement in them?

3. Where could I get Alley's book on queen-rearing?

MONTANA.

ANSWERS.—1. The matter is quite simple. Keep track of what your bees accomplish, especially those that are better than the average, and then breed from the best. If you continue this year after year you will not fail of results, even if inferior bees are all around you. It is possible, however, that even the best of your bees are not very good, and in that case it will pay well to send off to some reliable breeder for a better queen.

2. I use a cheap blank book, giving to each colony its place, and enter there the important items, especially the amount of honey each colony yields. That matter I keep in a spot on the page by itself, so that at any time I can glance at it and tell just what the colony has done. This credit may be made in the apiary at the time the honey is taken off. For instance, this credit may appear: 24, 24, 24, 15. That means I took away 24 sections each time at three different times, and the equivalent of 15 sections at the last time, making 87 sections in all.

3. It is out of print, but you will find the Alley queen-rearing method in "The Hive and Honey Bee," latest edition.

Removing Winter Protection in Spring—Keeping Queens Among the Bees

1. I have aways hesitated to remove the winter protection (chaff tray, etc.) in the early spring in order to examine colonies. As you advocate to take the bees out when hard sweet maple is in bloom, would this also be a good signal to go by for removing the winter packing, or, if not, what would be?

2. I have always been puzzled how to keep a lot of queens when not having immediate use for them. You state on page 111 about the maximum length of time one could keep queens in cages without danger to their laying powers. I suppose while so caged they do not lay any eggs. Even the interruption in laying while queens are in the mails is said to be harmful.

3. Suppose one has 3-frame nuclei, could the seven best frames of a colony be added to the nuclei without danger to the nuclei and queens?

PENNSYLVANIA.

ANSWERS.—1. If you will look again you will see that it is the soft maple, not the hard, that usually gives the signal for taking bees out of a cellar. The hard maple blooms a little later. Taking bees out of a cellar is a different affair from taking away the wrappings of those that have been wintered outside. My bees have no wrapping after being brought out, but some think it pays to give them protection after that time. At any rate, if my bees were outdoors and well packed, I would hesitate about unpacking them at the time of maple bloom unless I thought there was danger of their being short of stores, and even then it might be worth while to return the packing until about the time of fruit bloom.

2. In the case you speak of, the queens were kept in small cages in a small colony. This was in the spring when there was no heavy laying yet, and I doubt if the queens were at all injured by being kept from laying. My guess would be that a queen, or a number of queens, might be thus kept safely for a month, perhaps two months, in a queenless colony, or a queen-right colony if the bees would feed her. Indeed, she might be kept in a candied cage if the bees did not feed her, only in that case bees having a queen of their own might be hostile to her, and this nervous irritation might be bad for a queen. I am not sure that it has ever been claimed that the cessation from laying was an injury to queens sent through the mails. It doesn't hurt a queen to remain all winter without laying. Nor is it likely she is injured by ceasing to lay in a dearth long continued. She may be injured by being jarred and frightened in the mails, by *sudden* cessation from laying, and especially by being flung about when heavy with eggs.

3. Yes, if the bees had been queenless long enough to be thoroughly aware of their queenlessness, say two days. It would be still safer if the bees were taken from different colonies.

Brood Combs

What do you do with the brood comb after it is a few years old? Do you take it out or leave it in for a life time?

TEXAS.

ANSWER.—I have never taken away a comb from the bees merely on account of its age, no matter how old. So long as a straight worker comb remains in good condition I would rather have it than a new comb. One reason for that is that the bees themselves perfer the old comb. Give them an old black comb side by side with a new comb or a frame filled with comb foundation, and they will always choose the old comb first, either for brood or honey. At least that is the way my bees have done.

Many others, however, think it well to have the combs renewed every few years, some even going so far as to renew them every 2 years. Especially do they urge this in regions where foul brood prevails. The time preferred for this renewal is in the spring or early summer, the combs taken away being melted.

Cement Hives—Swarms—Preventing Them—Winter Entrance and Packing

1. I intend to make chaff hives with outside walls of cement ¾ inch thick, and inside walls of lumber ⅜ inch thick. The dead air space is to be filled with dry sawdust. Do you think this hive, with a cement bottom and lumber roof, will answer for summer and winter?

2. If I kill the queen to a swarm which has settled on a tree, will the swarm return to the parent hive?

3. Last summer a swarm returned to a hive before I could get it. I had planned to establish a new colony with this swarm, but it went back into the parent hive. I suspected the queen was too young. What was the reason the swarm returned?

4. To prevent swarming, I will shove the pile of supers back so as to make an opening of ½ inch for ventilation along the front. Will this prevent swarming and affect the storing of honey?

5. Which is the better, thin boards or burlap placed over the brood-chamber for wintering? Straw or leaves are to be placed above.

6. Should the thin boards be made tight or have a hole cut in the center?

7. Should the entrance be 1x5 inches, with a wire-cloth in it to prevent mice entering?

INDIANA.

ANSWERS.—1. I don't know, but from what little I have read I am afraid you will not like it. Better try it on a small scale, and

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please report how it turns out. Sawdust between walls is not liked so well nowadays as something looser, as planer shavings or crumpled newspapers.

2. As my queens are all clipped, I have had many swarms come out, and after the queen dropped on the ground the swarm would return to the hive after sailing about in the air for a few minutes. Sometimes they settle on trees, returning to the hive after hanging there for a time. Occasionally they will return to the wrong hive if a swarm has issued from it a little while before and the bees are making a call at the entrance.

3. I don't know.

4. Ventilating in that way is a help against swarming, although, of course, it will not prevent it. I have practiced it much, and never knew any harm to come from it in the way of chilling bees. The only harm is that sections next to the opening are delayed in being finished, but not always. Instead of shoving the lower section-super back, I shove it forward. I have used the plan with extracting-supers, and "stuttered" them; that is, I shoved the lower super forward, the next back, the next forward, and so on.

5. I have had no experience, but some claim one way is better and some the other.

6. Some have a hole in the center and some do not, but in either case there must be packing, the same as when gunny-sacking is used.

7. Wire-cloth with three meshes to the inch is a good thing at the entrance for winter, but not when bees are flying daily.

Introducing Queens

What success do you have introducing queens? We lose a great many by the candy route. This country is so dry they don't seem to eat her out. We always have to help her out, and she is often badly dealt with. Can you tell *me* some surer way of introducing? New Mexico.

Answer.—If you help a queen out, the excitement of opening the hive is likely to stir up the bees so that the queen is in more danger than when she quietly comes out of her own accord, when the bees eat out the candy. Instead of helping her out, you might wet the candy with water and return the cage, wetting it more than once if necessary, but leaving the bees to free the queen.

Yes, I can give you a way of introducing that is entirely sure, although it is some trouble, and I have never used it except with a queen of extra value. Put any number of frames of brood in an upper story over an excluder, where the queen can not lay in them. When all the brood is sealed, replace the excluder with a sheet of wire-cloth, put an empty story over it, into which you will put the frames of brood after you have brushed off *every single bee*. Put your queen upon the combs, close the upper story bee-tight, and in five days set it on a new stand, giving an entrance for a single bee to pass, enlarging the entrance a few days later. The queen, of course, is perfectly safe, as these young bees know no other mother.

Another way nearly as safe, but easier, is based on the fact that it is the older bees that kick up a rumpus with a new queen. Take from the hive one or two frames of brood and put them in a new hive. Set this new hive in place of the old hive, put on i supers if there are any, and cover over. It makes little difference whether you fill up the vacancies in the two hives. Now set the old hive on top of all, and put your caged queen in it. Of course, you have removed the old queen entirely. After the queen has been out of the cage two days or more, return the old hive to its place, giving back the brood-combs that were removed. The old bees, as they return from the field, will accept the situation kindly, having been queenless since the change. With this plan you ought not to have one failure in a hundred.

Wintering Bees on a Porch in China

I am wintering my bees in a porch at the back of my house. I covered the open sides of the porch with paper. It is about 12x6 feet. It has a big window, and a door also made of paper. I put the hives near the window and door, surrounded them singly with boxes 4 feet square, having no bottoms or tops. They are made of reed matting, and chaffed with rice husks from the bottom up to 7 or 8 inches above the hives. On top of the hives I put the supers with a piece of burlap nailed on the bottom of each. I put a board in the middle of each super, in which I cut an opening 4 inches square, and it is covered with a piece of glass through which I can feed and inspect the bees without disturbing them. Then I placed a thermometer on top of the frames just under the glass opening, and I find the temperature averages about 40 degrees Fahr., while the temperature in the paper-covered porch is about 20 degrees Fahr. The outside temperature near the porch is about 1 or 2 degrees lower. I found no dampness in the hives, and the bees are active and moving about in the hives whenever I examine them through the glass opening.

1. Does the queen, in this condition, still lay eggs and the colony rear brood?

2. Do you think my way of wintering satisfactory?

3. Would a thermometer put on top of the frames serve the purpose of approximately ascertaining the temperature in the hives? If yes, what average temperature should it show during winter, spring, summer and autumn for a normal colony?

4. In wintering, is it better to leave the bees in the cold (but not to the drafts of cold wind) so that they may not be able to move or fly rather than to artificially warm up the hive in order that the bees may not mistake the artificial warmth for spring. By flying out they would certainly die.

China.

Answers.—1. The likelihood is you will find the queens stop laying in the fall and then begin again perhaps toward the last of February, or in some cases possibly in January, although this is guessing, and my dates may be much out of the way, as I don't know the climate in your part of China. At any rate, I feel pretty sure your queens stop laying altogether for a time, even if the bees do not seem entirely dormant.

2. I would guess that a little higher temperature would do no harm, and yet my opinion is not worth as much as the opinion of the bees, and if they winter satisfactorily nothing more should be asked.

3. I suppose you mean the temperature in the cluster of bees, and a thermometer on top of the frames would not tell very much about this. In the human body the temperature remains nearly the same whatever the temperature of the surrounding air. It is a good deal the same with the bees. Indeed, when there is a fall in the thermometer placed over the frames, you might find the temperature rising in the cluster, paradoxical as it seems, just as the colder the day the hotter the fire in our dwellings. For the bees have the ability to raise the temperature in the cluster by increased consumption and activity.

4. Yes, nothing should be done to induce the bees to fly when they would get chilled. Indeed, it is sometimes a good thing to shade the entrance lest the sun shining in may induce them to fly when the air is too cold. While the hives should be protected, there is such a thing as keeping them too warm.

Renting Bees on Halves—Cellar Ventilation

1. I let my bees on halves last summer. Should the man who took the bees have left enough stores for winter? Four of my colonies starved to death before I could attend to them, and 10 more would have starved within a week if I hadn't fed them. This man told me they had plenty of stores for the winter. I let him have 28 colonies on June 5. Wasn't he supposed to return to me 28 colonies in the fall? He returned only 28 colonies with half of the increase, and the increase was 8 swarms. Now, wasn't this man supposed to leave my bees in good shape ready to put into the cellar?

Now, Doctor, is there any law on renting bees on halves?

2. I winter my bees in the cellar, and the thermometer registers from 40 to 42 degrees. It is a stone cellar with a cement floor, and the ceiling has a double floor filled in between with sawdust. It is 10x14 feet inside, and 6 feet high. I have a 2 foot square hole in the center of the ceiling for ventilation. I throw a quilt over this box, but still the cellar seems to be damp. Can you tell me the cause? The bees are quiet. I find big drops of water under the cover over the bees when I feed them. New York.

Answers.—1.—If there is any law about the matter it must be a State law. But I very much doubt that there is any law about it in your State or any other State. The great probability is that the law would insist on the carrying out of any contract made in the premises. So the whole thing depends upon the agreement that was made, and to make sure about it the agreement should have been in writing. If there was an agreement that you should receive back a certain number of colonies at a specified time, then that agreement should be carried out, even if the man to whom the bees were let should have to buy bees to make out the number. As to disposal of the increase, a common custom is to divide it equally, but that custom is hardly law. You let the man have 28 colonies, and you say "he left me only 28 with half the increase, and the increase was 8 swarms." If you mean by that that you got back the orignal number, 28, and half of the 8 swarms, or 32 in all, it would seem right. If, however, he left you only 28, *including* half the increase, or only 28 in all, that would seem unusual. As to the condition of the bees in the fall with respect to stores, that depends upon agreement. Unless there was some special agreement to the contrary, you would get the bees back in the fall without any feeding, if the season was so poor that they needed feeding in the fall. But if they had plenty of stores for winter in the brood-chamber, and he should extract some of the honey from the brood-chamber before turning over the bees to you, then I should say he was not trying to play fair.

In a matter of this kind, if there is no written agreement, the fair thing to both parties is the fair thing to do If you have bees and I take care of them, I furnish the time and perhaps the location and you furnish

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the bees. If there is no honey I have lost my time, and you will have to lose your bees unless you furnish me with honey to feed them, in which case I would feel compelled to do the work.

But if there is a crop and I make some money, you are entitled to a part of the profit.

The custom is for the man who furnishes the bees to furnish the material, hives, sections, etc., and the crop and the swarms are divided equally. This is a fair division between labor and capital.

2. Regarding the moisture in your cellar, you have not enough ventilation.

REPORTS AND EXPERIENCES

An Ontario Letter

So far this winter has been mild and favorable for bees in this locality, along the south shore of Lake Ontario. The mercury has been playing between 4 degrees and 40 degrees until Feb. 20, when the thermometer went up to 60 degrees, and the bees on the summer stands have taken a good flight, seeming to be all right. Those in the cellar are doing fine so far, and remain very quiet.

The writer has been a bee keeper close to 50 years as a side issue, and over 10 years for pleasure, yet still remains as one who has followed the old Swiss saying, "Drink, drink, drink;" in order to accomplish anything in the bee-fraternity worth while.

REV. J. M. WISMER.

Jordan Station, Ont.

Discouraged With California

Prospect for a good honey crop in California is very poor at present. The rainfall so far has been very light, but we may have plenty of rain yet. This has probably been the coldest winter ever experienced in California since it was settled by the American people; but it is too early in the season to tell whether it has had any bad effect on the honey-producing plants, such as the sage and mountain buckwheat.

Last year was very poor, no crop at all, and a great many bees died from paralysis. The honey business in California is too uncertain to be depended upon alone for a living, and should be run in connection with something else.

L. G. SMITH.

San Benito, Calif., Feb 10.

Wintered Well Out-of-doors

I am sending this photograph of my apiary of 100 colonies in their winter quarters. This is March 4, and I have not lost a single colony, and they are in splendid condition in every way. I expect to harvest 25,000 pounds of section honey the coming season.

The apiary is protected on the north by buildings, and on the west by a high fence. This is my eighth year as a bee-keeper. My crop, last year, was 9000 pounds of finished sections, a large portion of which was fancy.

BELL E. BERRYMAN.

Central City, Nebr., Feb. 25.

Early Spring in Nebraska

Up-to-date bees have wintered well. Maple came near starting in southern Nebraska over a month ago. My bees were in the cellar from Dec. 1 to Feb. 20. As there was too much moisture in the hives, I set them in clustered groups and protected them from winds. They enjoyed two fairly nice days after being set out.

T. HULL.

Tobias, Nebr.

Fears Danger of Spraying

I am in the bee-business in a small way. I wintered 10 colonies on summer stands, and they all seem to be in very good shape from outward appearace, as I have not opened any of the hives yet. Yesterday, Feb. 21, I found the bees bringing in pollen, which is the earliest that I ever knew them to be bringing in pollen in this part of the country. We are having a very warm spell just now. The thermometer registered 72 degrees yesterday, which accounts for the bees being at work so early in the season.

I am fearful that our bees will be short of stores this spring on account of such a warm winter, and unless we have a very favorable spring we will have to do some spring feeding to guard against spring dwindling and loss.

I have always wintered my bees on summer stands, and have not lost any so far, but I always aim to protect them by covering them well and having a windbreak.

I am very much afraid that the reckless manner in which the fruit-men have been spraying will soon put an end to bee-keeping in this part of the country. Bees are worth more to the fruit-men than to the owner of the bees, in the way of pollenizing the fruit. In the spring of 1910 my neighbor had an orchard right by my bees, and when the trees were in bloom it was cold and the bees could not get out very much, and the trees that were closest to the bees were the only ones that had any apples on.

The owner asked me how I accounted for that? My idea was that the bees did not get very far from the hives, and only distributed pollen on the nearest trees, for one part of the orchard had as much bloom as the other did.

WELCH BIBBEE.

Cottageville, W. Va., Feb. 22.

BELL E. BERRYMAN'S LONE-TREE APIARY WINTERING WELL.

A Report from Maine

The outlook for the bee-keeper in this great potato country is not very bright at present. The past summer was too wet and cool, and bees went into winter quarters rather light in stores, and not up to the standard in bees.

The winter has been the mildest known in this section for many years up to February, with the lightest snow fall. In consequence, the clover fields are covered with a coat of ice. Since February came the mercury has tried to hide, most of the time in the glass bulb at the bottom of the tube. It is 15 degrees below zero today, with a strong wind blowing

Bees are wintered in cellars here, but an open winter like this badly injures the clover on which we depend for our surplus honey. If Burbank could be persuaded to make the potato blossom yield a liberal quantity of nectar of good quality, this would be a bee-keepers paradise.

We who have sighed for the sunny skies of southern California feel a little more contented in our northern homes since that terrible freeze. We have heartfelt sympathy for our brother bee-keepers and the citrus fruit-growers of that sunny (frost bitten) clime. May they never see anything like it again. Perhaps there is a lesson hidden in the frost and ruin that may reveal itself for the good of all. Let us hope so.

Caribou, Maine, Feb. 13. O. B. GRIFFIN.

Report from Illinois

I had 22 colonies last spring. My time being taken up with other business, I made arrangements with J. M. Bent, of Milledgeville, to take care of my bees on shares. Mr. Bent also has an apiary of his own.

I now have 58 colonies. All the increase is from the 22 except 2 swarms. We got nearly 3000 pounds of extracted honey and 350 pounds of comb honey this season. The picture only shows the west end of my bee-house. It extends 24 feet east. My bees are all in a healthy condition at present.

Polo, Ill. G. L. SAUER.

Blossoms of Almond Trees

I am sending you some pictures of the almond trees in full bloom. There are hundreds of acres of trees just like those here. The honey from the almond is bitter, but as it comes in February, it is fine for building up colonies. What swarming my bees do is in March, but in 1912 I had 25 colonies and no swarms. They gave me 2800 pounds of honey.

R. V. BRYNER.

Oakley, Calif., Feb. 26.

Bees Wintering Finely

Bees are wintering finely so far; however we had one day that was pretty rough on them. It was warm, and the sun was nice and warm, but a cold wind was blowing. There was all of a pint of chilled bees scattered around some of the hives.

QUIRIN-THE-QUEEN-BREEDER.

Bellevue, Ohio.

Mild Winter in South Dakota

The winter has been very mild for this part of the country, and there has been no snow so far I am afraid the prospect for clover is not improved by this condition. My bees are wintered in the cellar, and are doing well. The thermometer has not varied 5 degrees from 45 since they were put in.

South Dakota. GEO. F. WEBSTER.

Early Pollen

Mr. Scholl's comments on the need of early pollen caused me to remember a photograph taken in 1906, of bees working on rye flour. When the bees were examined that spring, late in March, a number of strong colonies with healthy looking queens were found without brood or eggs, while others not so strong had brood in all stages, some of it emerging.

These broodless colonies were looked into every day for over a week before I discovered that they were entirely out of pollen. I immediately began feeding rye flour mixed in coarse sawdust in the boxes, as shown in the photograph, and in three days 40 colonies used up 35 pounds of flour. A large feeder containing sugar syrup was hardly noticed while the flour held out.

Three days after they started on the flour, eggs in plenty were found in the broodless colonies. I have found it necessary to feed them only one spring since, which was when a severe freeze killed all the bloom and leaves on the early pollen-bearing trees, leaving no other source until dandelion bloom, which came that year in June.

Bees are wintering finely, and there is a heavy growth of white clover, which seems to be all right so far, though the ground is very dry with little snow. We need rain just as soon as the ground thaws out, to save the clover. D. G. LITTLE.

Hartley, Iowa.

Brood-Rearing Begins

I found brood in one of my colonies about Jan. 15, and now over half of them have started brood-rearing. It is down to nearly zero now, and has been below several times this winter. My bees are all on summer stands. R. R. VICTOR TIPPERT.

Quays, Ont. Canada.

L. L. Andrews' Experience

I am enclosing some pictures taken at various times during my 17 years' experience among the bees in sunny southern California.

Beginning the business 17 years ago this winter, by taking 24 colonies from the cliffs and trees near the border line of Orange and Riverside counties, in the Santa Ana Mountain, I have increased by buying, etc., to about 1200 colonies. I have made in one season all the way from a complete failure to as high as an average of 200 pounds per colony.

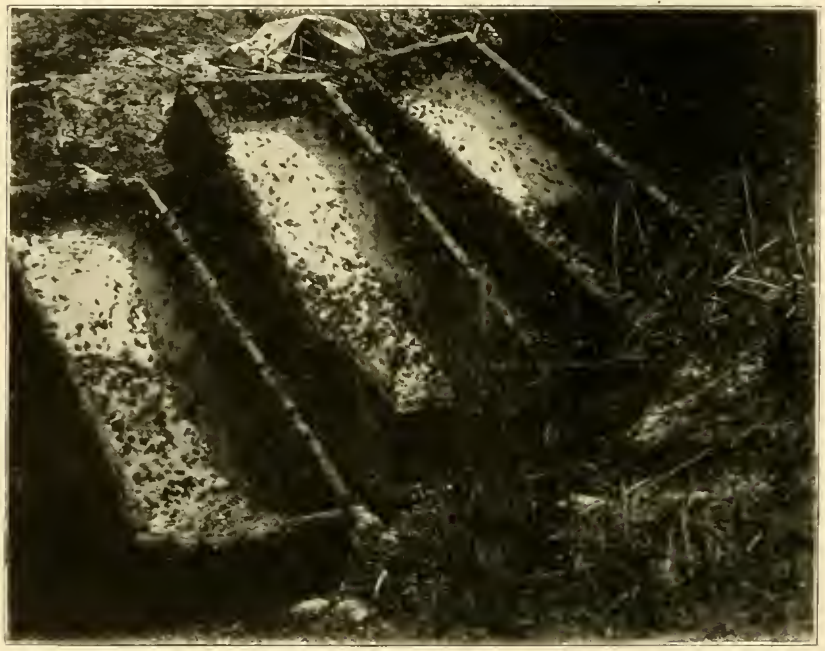
Anticipating a short crop last year, I shipped two carloads to northern Utah, and secured a good crop there, after I had taken the orange honey here. L. L. ANDREWS.

Corona, Calif.

Bees Winter Well in a Cave

I examined my bees in a cave today. They are in fine shape, and the temperature is 45 degrees. I have never lost a colony in the cave yet. The cave is below the level of the ground, and there are three doors to enter it. JOHN DUFFORD.

Atlantic, Iowa, Feb. 10



BEES GETTING FLOUR FOR POLLEN.

NOT BEE-KEEPING ALONE, BUT PLEASURE, TOO.—MR. ANDREWS BACK FROM A HUNT.

Classified Department

[Advertisements in this department will be inserted at 15 cents per line, with no discounts of any kind. Notices here cannot be less than two lines. If wanted in this department, you must say so when ordering.

BEES AND QUEENS.

NUTMEG ITALIAN QUEENS, leather color. After June 1, $1.00. A. W. Yates, Hartford, Conn.

GOLDEN QUEENS that produce 5 and 6 band bees. Untested, $1.00; Tested, $3.00. 1A9t Robert Inghram, Sycamore, Pa.

BEES AND QUEENS from my New Jersey apiary. J. H. M. Cook, 1Atf 70 Cortland St., New York City.

IMPROVED golden-yellow Italian queens for 1913; beautiful, hustling, gentle workers Send for price list. E. E. Lawrence, 1A8t Doniphan, Mo.

I SHALL requeen all of my colonies this spring. Will sell all one-year old queens for 40 cts. each; $4.20 a dozen. 4A1t Ventura, Calif. E. O. Meserve.

FOR SALE—Golden untested queens 80 cts. each, or $8.00 a dozen. Safe arrival guaranteed. D. F. Talley, R F.D. 4, Greenville, Ala.

SELECT MATED Howe strain Queens. Send for circular. One untested, $1.00; six for $4.50; $8.50 per 12. Ready about June 10. D. G. Little, Hartley, Iowa.

QUEENS—Improved red-clover Italians, bred for business; June 1 to Nov. 15. Untested queens, 75c; select, $1.00; tested, $1.25 each. Safe arrival and satisfaction guaranteed. 1A1y H. C. Clemons, Boyd, Ky.

ITALIAN QUEENS ONLY—Untested, $1.00; sel. tested, $1.50 Bees by pound and half-pound. Plans, "How to Introduce Queens," 15c; "How to Increase," 15c; or both 25c Descriptive list free. 3A2t E. E. Mott, Glenwood, Mich.

GOLDEN QUEENS that produce Golden Workers of the brightest kind. I will challenge the world on my Goldens and their honey-getting qualities. Price, $1.00 each; Tested, $2.00; Breeders, $5.00 and $10.00. 2Atf J. B. Brockwell, Barnetts, Va.

BEES in ½ and 1 pound packages without queen, $1.25 and $2.00. These are young bees free from disease, and will greatly stimulate your weak colonies. We will make good any serious loss in transportation if same is vouched for by your express agent. Charles C. Schneider, Dancy, Ala.

GOLDEN ITALIAN QUEENS, of best strain. All cells built in strong colonies. No foul brood or other disease. Untested, $1.00; tested, $1.50. Cash with order. Booking orders now. Delivery about April 15. 4A3t Ben Robinson, Taylor, Tex.

GOLDEN and 3-band Italians, also gray Carniolan queens. Tested, $1.00 each; 3 or more 90c each Untested, 75c each; 3 to 6, 70c each; 6 or more, 65c each. Bees per lb., $1.25; nuclei per frame, $1.50. A discount on orders booked 30 days before shipment. 1Atf Bankston & Lyon, Buffalo, Leon Co., Tex.

QUIRIN'S famous improved Italian queens, nuclei, colonies, and bees by the pound, ready in May. Our stock is northern-bred and hardy; five yards wintered on summer stands in 1908 and 1909 without a single loss. For prices, send for circular. Quirin-the-Queen-Breeder, Bellevue, Ohio.

THREE-BANDED ITALIAN QUEENS and bees of Superior Red Clover Strains (no other races in my apiaries); 15 years a breeder. After May 1, untested queen, $1.00; tested, $1.50. Best breeder, $5.00; 2-fr. nucleus, $2.50. Full colony in 10-fr. Dovetail or Danz. hive, $9.00. Add price of queens wanted with nuclei and colonies. Better book orders now. Circular free. J. W. Leib, 4A1t So. Ohio Ave., Columbus, Ohio.

GOLDEN and 3-band Italians, also gray Carniolan queens. Tested, $1.00 each; 3 or more 90c each. Untested, 75c each; 3 to 6, 70c each;

6 or more, 65c each. Bees per lb., $1.25; nuclei per frame, $1.50. A discount on orders booked 30 days before shipment. 3Atf
C. B. Bankston, Buffalo, Leon Co., Tex.

FOR SALE—Choice Golden Queens that produce Golden bees equal to any.
Wm. S. Barnett, Barnett's, Virginia.

MOORE'S Strain and Golden Italian Queens. Untested, $1.00; six, $5.00; twelve, $9.00. Carniolan, Banat and Caucasian Queens, select, $1.25; six, $6.00; twelve, $10.00. Tested, any kind, $1.50; six, $8.00. Choice breeders, $3.00. Circular free. W. H. Rails, Orange, Calif.

ONE of our customers (J. A. Carnes, M. D., Mt. Carmel, Pa.) writes: "Your bees are evenly marked; all golden but the tip. They are the most GENTLE bees I ever handled." Untested queens, $1.00 each. Send for wholesale prices. C. W. Phelps & Son,
3 Wilcox, St., Binghamton, N. Y.

WE WILL requeen all our 2000 colonies this spring. We offer the one-year-old-queens removed from these hives at 40 cents each, any quantity. Italian stock, delivered any time before June 1. Untested queens, this year's breeding, 60 cents each; delivery guaranteed. Book orders now.
Spencer Apiaries Co., Nordhoff, Calif.

FOR GOOD QUEENS AND QUICK SERVICE, you can't do better than place your order with me. I am prepared to handle any size of order at the following prices (Carniolan, 3-band Italian and Golden): One untested queen, $1.00; six for $5.40; twelve for $9.60. One tested queen, $1.50; six for $8.40; twelve for $15.60 One-frame nuclei, untested queen, $2.50; six 1-frame, $15.00; one-frame nuclei, tested queen, $3.00; six 1-frame, $17.40. Full colonies, one for $7.50; two for $14.00. If more frames are wanted than are listed, add $1.00 each for as many frames as are wanted with nuclei. No disease, and satisfaction guaranteed. W. J. Littlefield.
1015 W. 7th St., Little Rock, Ark.

HONEY AND BEESWAX

"NULL'S FAMOUS MELILOTUS HONEY." Sample for stamp. Null Co., Demopolis, Ala.

WANTED—Comb and extracted honey, and beeswax. Write us. Hildreth & Segelken,
265 Greenwich St. New York City.

WANTED—Comb, extracted honey, and beeswax. R. A. Burnett & Co.,
6A12t 173 S. Water St., Chicago, Ill.

WANTED—Choice extracted white and amber honey in barrels or cans. Send sample and price delivered f. o. b Preston
8Atf M. V. Facey, Preston, Minn.

FOR SALE.—Water White Alfalfa, Light Amber Alfalfa. Put up in any size packages, any quantity. Write for prices.
11Atf Dadant & Sons, Hamilton, Ill.

FOR SALE

FOR SALE—One hundred and twenty-five eight-frame hives, and five hundred supers with extracting frames, mostly unused, to be sold at a bargain. Philip Goode,
3A3t Lenexa, Kan.

FOR SALE—About one hundred black and hybrid Queens. Will ship any time after March 1st at 40 cts. each, or 12 or more 35 cts. each. D. E. Brothers, Attalla, Ala.

FOR SALE—An ideal bee location, consisting of house, barn, and 40 acres of land. For further particulars, write to 3A1t
J. J. Zimmermann (Administor), Alma, Wis.

FOR SALE—Empty second-hand 60 lb. cans-two cans to the case, good as new, 25 cents per case. C. H. W. Weber & Co.,
2146 Central Ave., Cincinnati, Ohio.

FOR SALE—20 colonies of bees in 8-frame Dovetailed Hives; 40 Supers for Comb and Extracted Honey. A 2-Frame Cowan Honey-Extractor. Address, D. Hartman,
Williamsburg, Kan.

FOR SALE—50 to 300 colonies, 8-frame; good condition. E. F. Atwater, Meridian, Idaho.

FOR SALE—1750 Shallow Danzenbaker Extractor Frames; nailed. A. I. Root Co. make. Price, $1.75 per hundred. Will sell in any quantity. The Anna Dean Farm,
4A2t Barberton, Ohio.

FOR SALE—67 swarms Italian bees, healthy and vigorous. Owner has died; hence must be sold. A. Bradley Estate, Lee, Mass.

FOR SALE—One Dadant hive; has 10 wired frames, 1 division-board, and 1 extracting-super; one Rietsche press; one Lewis foundation fastener; 25 nos. Gleanings, 1903; 28 nos. 1902; 22 nos. 1904; 12 nos. 1906; 22 nos. 1907; 25 nos. 1008; 24 nos. 1909; 24 nos. 1910; 24 nos. 1911. 165 nos. American Bee Journal binders; 13 nos. for year 1894; 7 nos. Review, 1905; 9 nos. 1910; 11 nos. 1904. Make offers.
Edwin Bevins, Leon, Iowa.

SUPPLIES.

FOR SALE—Bees, Honey, and Bee-Keepers' Supplies. A. E. Burdick, Sunnyside, Wash.

CHEAP—14 1½ story 8-fr. Hives for 4x5 boxes. Fine shape. Wm. Vollmer, Akron, N. Y.

BEE-KEEPER, let us send our catalog of hives, smokers, foundation, veils, etc. They are nice and cheap. White Mfg. Co.,
4Atf Greenville, Tex.

BEE-SUPPLIES for all Bee-Keepers in southern Idado and East Oregon. Wholesale and retail. All we want is an opportunity to figure with you on Supplies. Write for Catalog. It will be ready by Jan. 1, 1913. It costs you a postal card only.
C. E. Shriver, Boise, Idaho.

BEE-SUPPLIES—none better. 35 years of experience.

1 Ideal Winter-Case, complete	$2.50
100 Hoffman Brood-Frames in flat	2.50
500 No. 1 Sections	2.50
100 Section-Holders scalloped	2.00
100 Section Slats, ¼ inch	1.00
1 Champion Smoker	.70
DADANT'S FOUNDATION.	
Medium Brood, per pound	.50
Thin Surplus " "	66
Extra Thin " "	.69

Discount on larger amounts.
Satisfaction guaranteed or money refunded. R. H. Schmidt.
R. R. No. 3, Box No. 209. Sheboygan, Wis.

WANTS AND EXCHANGES

WANTED—Ten full colonies of bees in 10-frame hives. E. A. Schmalle, Sanborn, Ia.

WANTED—Bees for cash. Give price and number of colonies for sale. 4A1t
W. Davenport, 6120 N. Paulina St., Chicago, Ill.

WANTED—To buy an apiary, large or small, in a good location
Dexter Carder, R. D. 2, Ludlow, Ky.

WANTED to form partnership with a good bee-man in a good location. I will furnish my share of the capital. C. A. Ellis,
4A2t Rt 1, St. Albans, Vt.

WANTED 200 or less colonies of bees—any style hive or box. For sale 250 painted dovetailed supers for 4¼ sections at 25c each in lots of 25 or more Correspondence solicited.
4A2t A. W. Smith, Birmingham, Mich.

BEES WANTED—Could take a Carload of Bees in spring: prefer Langstroth hives, and Italian Bees, but open for others. Give particulars. Address, R. F. Holtermann,
2A3t Brantford, Ont., Canada.

MISCELLANEOUS

BEE-KEEPER'S WIDOW—Sell your bees. I come for them. Frank Allen,
Philipsburg, Quebec, Canada.

LOST—Note book at Cincinnati convention. Will those who paid me for Review please let me hear from them, so they can be properly credited. E. B. Tyrrell,
214 Hammond Bldg., Detroit, Mich.

DETECTIVES WANTED—Young men to operate in own locality, secret service work. Experience unnecessary. Enclose stamp for particulars. Universal Detective Agency,
304 Colcord Bldg., Oklahoma City, Okla.

SITUATIONS.

WANTED—First-class bee-man to take charge of six hundred colonies of bees in South West Texas. Unless competent and able to give references, don't apply.
P. O. Box 1048, San Antonio, Texas.

WANTED—Help in a queen-rearing apiary. Male or female. Experienced or to learn. No drinker or tobacco chewer. Address,
4Atf J. L. Strong, Clarinda, Iowa.

POULTRY

INDIAN Runner Ducks, light fawns, also dark penciled, white eggers, $1.00 and up.
R. O. Dickson, Box 61, La Harpe, Ill.

FOR SALE—Buff Orpington eggs, pure bloods: $1.00 for 15. Satisfaction guaranteed.
2A1y W. H. Payne, Hamilton, Illinois.

FOR SALE—White-egg strain Indian Runner Ducks, White Orpingtons, White Wyandottes, Houdans, Bronze Turkeys. Ducks. $1.25 each. A. F. Firestone,
Broadwell, Athens Co., Ohio.

EGGS for hatching leading varieties poultry, Geese and Belgian Hares. Catalog free. Satisfaction guaranteed. 4A2t
Harvey L. Stumb, Richland Center, Pa.

C. W. DAYTON, Chatsworth, Calif.:

We have produced and bought honey in California for 20 years, and the six cans we bought of you are the best we ever tasted.

CLARENCE V. GLASSCOCK & SON,
Santa Paula, Calif.

Established 1885
WE CARRY AN UP-TO-DATE LINE OF
BEE-KEEPERS' SUPPLIES

Write for our 64-page catalog free, and for lowest prices on supplies. Full information given to all inquiries. We handle the best make of goods for the bee-keeper. Freight facilities good. Let us hear from you.

JOHN NEBEL & SON SUPPLY COMPANY
High Hill, Missouri

CARNIOLAN QUEENS!

Untested $1.00 for one,	**$5 for six,**	**$10.00 for twelve**
Tested $1.50 for one,	**$8 for six,**	**$15.00 for twelve**

These queens are bred from the best strains selected after sending to queen raisers in many different places in Austria. Having bought all the bees within several miles of this Apiary we will agree to replace any untested queens that prove to be hybreds. Some of the best imported Carniolans show slight traces of yellow, but are gentle, not a cross hybred with two or three yellow bands.

WM. KERNAN, Dushore, Pa. Route No. 2.

PONTIAC ENGRAVING CO.
ARTISTS
ENGRAVERS-ELECTROTYPERS
542-550 S. DEARBORN ST.
PONTIAC BLDG. CHICAGO.

ALSIKE CLOVER SEED.

Small red, Mammoth, timothy, alfalfa, sweet clover, (white or yellow) millet, rape, blue grass, etc., also seed corn, thoroughbred, four varieties. Catalog apiary supplies free. Honey new in July and later.

F. A. SNELL,
Milledgeville, - - - Carroll County, Ill.

BOOKS FOR BEE-KEEPERS

FOR SALE BY

AMERICAN BEE JOURNAL,

HAMILTON, ILLINOIS.

First Lessons in Bee-Keeping, by Thos. G. Newman, revised by C. P. Dadant.—Intended mainly for beginners. Nearly 200 pages, and over 150 pictures. Bound in strong paper cover, showing bee-brood in all stages of development from the newly-laid egg. This book contains the foundation principles of bee-keeping, as its name indicates. Price, postpaid, 50 cts.; or free with the American Bee Journal one full year if paid strictly in advance—by either new or renewal subscription at $1.00.

Fifty Years Among the Bees, by Dr. C. C. Miller.—340 pages, bound in cloth, and illustrated with 112 half-tone pictures taken by Dr. Miller himself. It is a good, live story of successful bee-keeping by a master of the subject, and shows with clearness just how Dr. Miller works with bees and produces tons of honey. Price, $1.00, postpaid; or with the American Bee Journal a year, $1.80; or given FREE as a premium for sending 3 New subscriptions at $1.00 each.

Scientific Queen-Rearing, as Practically Applied, by G. M. Doolittle.—It tells how the very best Queen-Bees are reared in Nature's Way. A good authority says: "It is practically the only comprehensive book on queen-rearing now in print. It is looked upon by many as the foundation of the modern methods of rearing queens wholesale." Price, bound in cloth, 75 cts., postpaid; or with the American Bee Journal a year—both for $1.50. The same book bound in leatherette, 50 cts., postpaid; or free with the American Bee Journal one full year if paid in advance strictly, by either new or renewal subscription at $1.00.

Langstroth on the Honey-Bee, revised by Dadant.—This classic on bee-culture has been entirely rewritten. Fully illustrated. No apiarian library is complete without this standard work by the "Father of American Apiculture." Over 500 pages, bound in cloth. Price, $1.20; or with the American Bee Journal a year, $1.90; or given FREE as a premium for sending 4 New subscriptions at $1.00 each.

Bee-Keeper's Guide, or Manual of the Apiary, by Prof. A. J. Cook.—This book is very instructive, interesting, helpful, and thoroughly practical and scientific. It is perhaps the most complete of any bee-book on the Anatomy and Physiology of bees, and also the Botany of bee-keeping. Bound in cloth, 544 pages, 295 illustrations. Price, postpaid, $1.20; or with the American Bee Journal a year—both for $1,90; or given FREE as a premium for sending 3 New subscriptions at $1.00 each.

A B C & X Y Z of Bee Culture, by A. I. & E. R. Root.—Over 500 large pages describing everything pertaining to the care and management of honey-bees. It is a veritable encyclopedia on bees. 400 engravings. Bound in cloth. Price, postpaid, $1.50; or with the American Bee Journal a year—both for $2.25; or given FREE as a premium for sending 5 New subscriptions at $1.00 each.

Advanced Bee Culture, by the late W. Z. Hutchinson.—The author was an extensive bee-keeper, and a practical, helpful writer on bees and bee-keeping. Over 200 pages, cloth bound. Price, postpaid, $1.00; or with the American Bee Journal for a year—both for $1.80; or given FREE for sending 3 New subscriptions at $1.00 each

Southern Bee Culture, by J. J. Wilder, of Georgia, perhaps the most extensive bee-keeper in the State. It is a real hand-book of Southern bee-keeping. Bound in paper, 145 pages. Price, postpaid, 50 cts.; or with the American Bee Journal a year—both for $1.30.

Amerikanische Bienenzucht, by Hans Buschbauer.—A bee-keeper's hand-book of 138 pages, which is just what German bee-keepers need. It is fully illustrated and bound in cloth. Price, postpaid, $1.00; or with the American Bee Journal a year—both for $1.70.

The Honey-Money Stories.—64-page booklet of short, bright items about honey. Has 23 fine illustrations, and 3 bee-songs. Its main object is to interest people in honey as a daily table food. Price, postpaid, 25 cents; or with a year's subscription to the American Bee Journal—both for $1.10. Two copies for 25 cts.

The Emerson Binder.—It has a stiff board outside like a book-cover, with cloth back. Will hold easily 3 volumes (36 copies) of the American Bee Journal. Makes reference easy, and preserves copies from loss, dust, and mutilation. Price, postpaid, 75 cts.; or with the American Bee Journal a year—both for $1.60; or given Free as a premium for sending 2 New subscriptions at $1.00 each.

A Modern Bee Farm, by Samuel Simmins The author is a live English bee-keeper. He has kept up with the progress in this line not only in his own country but all over the world. His views are determined, but very well taken, and his points are made with an accuracy which is convincing. Cloth bound, 470 pages. Price, postpaid, $2.00, or with the American Bee Journal one year, both $2 75.

Biggle Bee-Book.—This is a very small cloth-bound, well gotten up book. Its size is 4x5 1-2 inches, and it was designed to be carried in the pocket of the amateur bee-keeper. It contains concise information regarding the best practice in bee-culture. An excellent book for use when a person has only limited time to give to bee-keeping. Price by mail, 50 cents; or with the American Bee Journal one year, $1.35.

ATTENTION!

All bee-keepers all over the world who desire to improve their native or mixed race of bees' **The direct exportation from Carniola of the Gray-Banded Alpine Bee** which until now was conducted by the Imperial Royal Agricultural Association of Carniola, **in the fotore wiil be managed on his own account by**

JOHANN STRGAR

Wittnach. P. O. Wocheiner Feistritz,
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58 honors awarded at diverse Agricultural Exhibitions for achievements as a breeder of the best strain of Carniolans and producer of apicultural products.

All queens taken from full colonies and not over one year old. Mailed postage free. **Dead Select Tested** queens will be replaced if returned in 24 hours after arrival, except S. America and Australia. **Dead Select Untested** queens will not be replaced. Send remittance by International M. O. with order. Safe arrival of nuclei and hives **not** guaranteed; orders of this kind must be accompanied by freight expenses. The safest transport of stock is in Carniolan box hives; after arrival or later, the combs can be cut out to fit any frame. Prices of **Select tested** queens March-May, $5; June-October, $3.50. Select Untested Queens. June-August, $2.00. Carniolan Box-Hives with 4-5 pounds of bees, Select Tested Queen, brood, bees, and honey, $7.00. Write in English to the above address for complete Price List and Booklet which will be mailed free.

ITALIAN BEES

Choice Home Bred and Imported Queens

Reared in full colonies

Prices for April

One tested queen	$2.00
One select tested queen	$2.60
One Breeder	$4.00
One comb Nucleus, no queen	$1 75

Safe arrival guaranteed. For description of each grade of queens send for free catalog.

J. L. STRONG,

204 E. Logan St., CLARINDA, IOWA

ITALIAN QUEENS

$1.00 EACH, $9.00 PER DOZEN.

Queens are reared by as good a method as anybody can rear Queens. My stock is hearty and fine honey-gatherers. All queens shipped by return mail within 24 hours after I receive the order.

M. BATES, R. D. No. 4, Greenville, Ala.

Line Bred

Carniolan Queens!

Selected and bred according to the most powerful method known to intensify and perpetuate the good qualities of the breeding queen. Orders booked now for June delivery.

Untested, $1.00 eaeh; $9 doz. Tested $1.50 each. Breeders, $10. Ask for our paper, "SUPERIORITY OF THE CARNIOLAN BEE." It's Free.

ALBERT G. HANN,

Carniolan Queen Breeder. PITTSTOWN, N J

Early (FROFALCON) Queens "ITALIANS"

Untested Queens to June 1st $1.00 each. After June 1, 90c each. Special prices in large quantities. A 5-pound bucket of Orange Blossom Honey delivered at your door by express for $1.10.

JOHN C. FROHLIGER,
1642 Milvia Street, Berkeley, Calif.
Greater San Francisco, Callif.
Falcon Bee-Supplies, etc.

WESTERN QUEENS!

Three band long-tongued Italians produce strong workers, strong workers build strong colonies, strong colonies store quantities of honey.

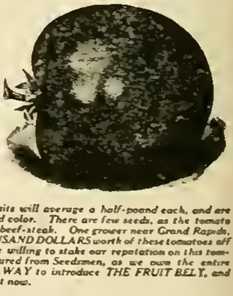
Mr. Bee-Keeper: Our prices for queens that produce quantities of honey are: Untested, 1, 90c; 6, $4.80; 12, $9.00. Tested, 1, $1.35; 6, $6.50; 12, $12.00. Virgins, 1, 40c; 3 for $1.00. Queens shipped on 1-fr. nuclei, $1.75 extra. Satisfaction guaranteed.

GLEN L. EVANS, - GREENLEAF, IDAHO

Breeder and importer of fine Queens

A TRIAL PACKET of This Grand *TOMATO*

FREE!



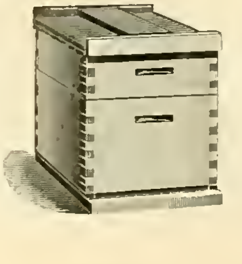
Rowe's GRAND RAPIDS MARKET TOMATO was originated by Mr. George E. Rowe, the Editor of THE FRUIT BELT, America's Greatest Fruit Magazine. This tomato is the very earliest of the heavy cropping varieties, it yields abundantly, a Grand Shipper, and is the Most Delicious Tasting tomato ever put upon the market. In Size, the individual fruits will average a half-pound each, and are very uniform in shape, size, and color. There are few seeds, as the tomato is solid, and cuts like a piece of beef-steak. One grower near Grand Rapids, Mich., sold OVER TWO THOUSAND DOLLARS worth of these tomatoes off of two thousand vines. We are willing to stake our reputation on this tomato. The seed cannot be procured from Seedsmen, as we own the entire stock. We are GIVING IT AWAY to introduce THE FRUIT BELT, and you can get a packet, if you act now.

The Fruit Belt America's Greatest Horticultural Journal

Shows you How to Make Money Raising Fruit: How to Prune and Thin Properly: How to Control Insects and Plant Diseases by Spraying: What Varieties to Plant: How to Set out New Orchards: How to "Rejuvenate" Old Orchards. THE FRUIT BELT is a Big Illustrated Magazine, Filled with Good Things for You.

TRIAL OFFER *We will send THE FRUIT BELT to your address for the remainder of this year, upon receipt of Thirty Cents, and we will send to you, by return mail FREE, a trial packet of Rowe's Grand Rapids Market Tomato seed. Don't delay, the stock is limited. Address - -*

THE FRUIT BELT R.112, HAWKINS BUILDING
GRAND RAPIDS, MICHIGAN



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28 years experience in making everything for the bee-keeper. A large factory specially equipped for the purpose, insures goods of highest quality. Write for our illustrated catalog today.

LEAHY MFG. CO. HIGGINSVILLE, MO
OMAHA, NEBR.

American Bee Journal

ROOT'S POWER HONEY-EXTRACTORS

Our new catalog is full of information about these labor-saving machines. With the difficulty of getting competent help, the power extractors are being sold largely in this and foreign countries, and the present demand is far greater than ever before. Read what a California producer says in a letter to a disinterested party, which we were permitted to publish:

GENTLEMEN:—I should like to say a few words in favor of the ball-bearing Root Automatic Extractor, as I believe it is as near perfection as it can be. This machine runs so easily that a few turns to get it up to speed is all that is necessary; and the men, while using the No. 17, which I formerly had, could average only 1000 lbs. per day, while with this machine they can average 2000 lbs. with but one additional man. No apiary can afford to be without one of these machines.

I feel like congratulating The A. I. Root Co. for making an invention that is such a satisfaction, financially to the honey-producers' interests.

B. B. HOGABOOM, Elk Grove, Calif.

—HERE ARE A FEW MORE—

A word about the power extractor I purchased from you through H. L. Jones, of Goodna. I found it to work very satisfactorily, and it will do all it is claimed to do and more. I use the gasoline engine for several purposes besides driving the eight-frame extractor, such as driving the washing-machine for the lady of the house, and corn cracking and grinding. I consider it one of the best speculations I made in connection with the apiary.

F. C. GOLDER, Pittsworth, Queensland.

Yours of the 16th, also the brake-band for power-extractor, came to hand. Thanks for sending it so promptly. This is my second season with the power extractor. I would not like to be without it now, even if I had only fifty colonies.

DAVID RUNNING, Grindstone City, Mich., July 10, 1910.

I received the extractor I ordered of you some time ago. It arrived in good shape. I set it up and extracted 143 quarts of honey, and sold it at 35 cents a quart. The extractor is just fine—does the work completely.

F. D. KING, Athens, Ohio. Aug. 16, 1912.

The engine I got of you this spring has done fine. We ran it all fall, and never had any trouble at all.

V. V. DEXTER, North Yakima, Wash., Jan. 19, 1911.

For Full Particulars See Our Catalog

The A. I. ROOT COMPANY, Medina, Ohio

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New York, 139-141 Franklin St.
Philadelphia, 8-10 Vine St.
St. Paul, 1024 Mississippi St.
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Des Moines, 565 W. Seventh St.
Syracuse, 1631 Genesee St.
Mechanic Falls, Maine

A Few Agents Handling these Goods:

California	Madary's Plaining Mill, Fresno
	Madary's Supply Co., Los Angeles
Colorado	Barteldes Seed Co., Denver
Indiana	Walter S. Pouder, Indianapolis
Michigan	M. H. Hunt & Son, Lansing
New Mexico	Roswell Seed Co., Roswell
Missouri	Blanke Mfg. & Supply Co., St. Louis
	John Nebel & Son Supply Co., High Hill
Ohio	S. J. Griggs Co., Toledo
	C. H. W. Weber & Co., Cincinnati
Texas	Texas Seed & Floral Co. Dallas
	Toepperwein & Mayfield Co., San Antonio

SUPERIOR BEE-SUPPLIES

Specially made for Western bee-keepers by G. B. Lewis Co. Sold by

Colorado Honey-Producers' Association,
DENVER, COLO.

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Classified, 15c a line
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Published Monthly by the
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Los Angeles, Calif.
GEO. L. EMERSON, Manager
118 Market Street

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Untested	$1.00
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We have 50 Golden and Three Band Breeders. Can mail from April 1 to 15. Place your orders now. Address,

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ITALIANS! CARNIOLANS! BANATS!

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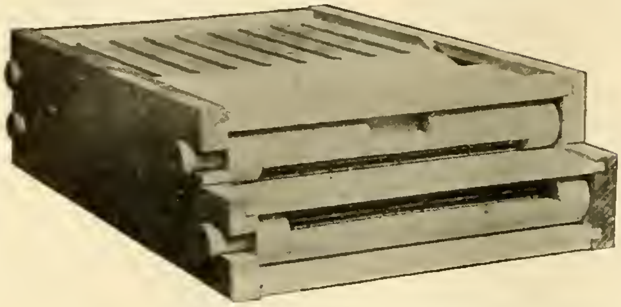

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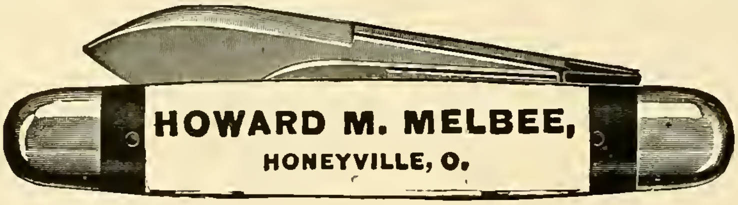

Your Name and Address will be put on one side of the handle as shown in the cut, and on the other side a picture of a Queen-Bee, a Worker-Bee, and a Drone-Bee. The handle is celluloid, and transparent, through which is seen your name. If you lose this Knife it can be returned to you, or it serves to identify you if you happen to be injured fatally, or rendered unconscious. The cut is the exact size; it is made of best steel. When ordering be sure to write exact name and address. Knife delivered within two weeks after we receive order.

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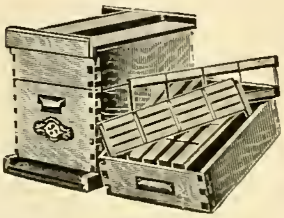
You can get your Bee Supplies and save time by sending your order to us, we can save you in FREIGHT as well as Money on supplies. Send for catalog of Supplies and Queens.

One Untested Queen, $1.00; six, $.500; twelve , $0.00. One Tested Queen, $1.50; six, $8.50; twelve, $15.00. One-frame Nuclei, Untested Queen, $2.50; six 1-frame, $15.00; one-Frame Nuclei, Tested Queen, $3.00; six 1-frame, $17.00.

If more Frames are wanted than are listed, add $1.00 each for as many frames as are wanted with Nuclei. No disease, and satisfaction guaranteed.



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However, it is so scarce that they can't get much of it. It is a case of under production. Better make this year a comb honey year. Pages 12 and 13 of our Catalog show comb honey outfits—and they are all Root's goods. Beeswax wanted

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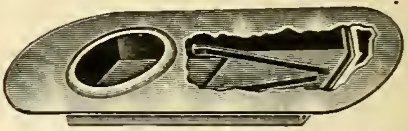

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FOR SALE.—The 3-band queens are of the A. I. Root Co.'s improved long-tongued bees which have proven themselves to be the best of honey-producers. The Goldens are good bees bred for beauty. I use the Doolittle and Miller plans for queen-cells. One untested queen, 75 cts.; 12, $7.50; 25, $13 50; 50, $25.00; 100, $45. Will be ready by April 1, or sooner. Double this price for tested queens to be sent the first of June One lb. of bees, $1.00, with the price of queen added: 2 lbs., $1.75, with price of queen added. One-frame nuclei, $1.50; 2-frame, $2 50; 3-frame, $3.50. To each nucleus add the price of queen . No personal checks accepted All queens arriving dead will be replaced. 1Atf

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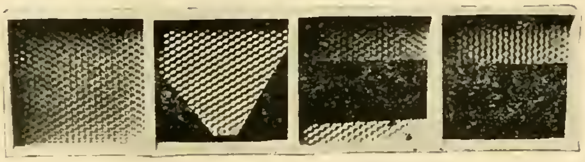

Other Goods:—Double grooved Hoffman brood-frames as well as sections will be needed for spring use. As it takes a lot of time to put up frames and sections with starters or full sheets, it would be well to look up your requirements. It will give you ample time by ordering now.

Light Standard Brood,	1 lb., 58c; 5 lbs., 57c.	Light Section,	1 lb., 65c; 5 lbs., 64c.
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Bred from well selected stock and reared under most advantageous conditions established through fifteen years of practical and scientific experience.

Choice Italian Queens Untested, during April and May, $1.25 each. In lots of ten or more, $1.15 each. Prices in larger lots upon application. Send for four page circular on the Italian Bee.

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Dr. Henry Jones Says:

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Ralph Waldo Emerson Did

He said you can attain to royalty by loving sweets.

> "He who knows what SWEETS .... are in the ground, the waters, the plants, the heavens, and how to come at these enchantments, is the rich and royal man."

"HOW to come at these?" Aye, there's the rub.

How many people miss them! and perhaps some of these many, strange to say, *keep bees.* Want to know how? Send $1.00 for a year's subscription to

The Guide to Nature
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It is edited by Edward F. Bigelow, a sweets extractor—in other words, "a bee-man" and a naturalist.

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SECTIONS

They are the Finest in the Land—None Better.

Our Prices will make you smile. We want to mail OUR BEE-SUPPLY CATALOG to every bee-keeper in the land. It is FREE. Ask for it.

H. S. Duby, St. Anne, Ill., carries a full line of Our Goods, and sells them at our regular catalog prices.

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Please mention Am. Bee Journal when writing.

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Will be ready to take care of your queen orders, whether large or small, the coming season. Twenty-five years of careful breeding brings Laws' queens above the usual standard; better let us book your orders now.

Tested queens in March; untested, after April 1st. About 50 first-class breeding-queens ready at any date.

PRICES: Tested, $1.25; 5 for $5.00; Breeders, each $5.00. Address

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English Honey-Spoon.

This fine 90c Honey-Spoon and the American Bee Journal for one year—both for only $1.75. Send all orders to the American Bee Journal, Hamilton ,I

HONEY AND BEESWAX

Chicago, March 17.—The supply of comb honey on this market is very light at this writing. All of the better grades have been marketed. Indeed, there is very little of any kind now offered. Prices range from 16@17c per pound for the best grades, and the amber grades from 13@14c, with the fancy light amber bringing 15c per pound. There remains quite a liberal supply of extracted honey, but it is being gradually reduced. Prices for the white clover and lindens range from 9@10c per pound; other white honeys 8@9c per pound, with the amber grades having a range of from 6@9c per pound, according to what produced from, body and flavor. There being a demand for sage honey, and what little is obtainable, sells readily. Beeswax is steady at from 30@32c per pound, according to color and cleanliness. R. A. Burnett & Co.

New York, March 20.—We have nothing new to report, the condition of the market being about the same. Comb honey is well cleaned up with some few little lots still arriving and selling at 14@16c for white, and 12@13c for lower grades, according to quality and style of package. Extracted honey runs quiet, the demand being mostly for fine grades, of which there is not much supply. There is no change in price. Beeswax steady at 31@32c. Hildreth & Segelken.

Cincinnati, March 18.—The demand for comb and extracted honey is light, with a good supply. No. 1 white comb honey sells in large lots at $3.60 per case of 24 sections. There is no demand for off grades. White extracted honey in 60-pound cans is selling from 9½@10c; light amber in barrels 7@7½c; in 60-pound cans, 8@8½c. Beeswax in fair demand, sells at $33 per hundred.

The above are our selling prices, not what we are paying. C. H. W. Weber & Co.

Indianapolis, March 20.—Fancy white comb is selling at 18c per pound; No 1 white one cent less; amber in slow demand at varied prices. Supply of fancy white is limited, and none is now being offered by producers. Best extracted sells at 11@12c in 5-gallon cans. Beeswax is in good demand, and producers are being paid 30c per pound. Walter S. Pouder.

Cincinnati, March 20.—The demand for both extracted and comb honey is very good, and we are selling Fancy Double Decker comb honey at $3.75 to $4.00 a case; fancy extracted honey in 60-pound cans from 9@10c a pound, and amber extracted in barrels at from 6½@8c a pound, according to the quality and quantity purchased. For choice, bright yellow beeswax we are paying from 28@30c a pound, and if taken out in trade 2c a pound more. The Fred W. Muth Co.

Boston, March 21.—Fancy white comb, 16@17 per pound; No. 1, 15@16c. Fancy white extracted, 11@12c; light amber, 9@10c; amber, 8@9c. Beeswax, 30c. Blake-Lee Co.

Kansas City, Mo., March 19.—The supply of comb honey is very light; demand good. The supply of extracted good; demand light. We quote as follows: No. 1 white comb, 24-section cases, $3.25 per case; No. 2, $3.00. No. 1 amber, $3.00; No. 2, $2.75. Extracted, white, per pound, 8@8½c; amber, 7@7½c. Beeswax, per pound, 22@25c.
C. C. Clemons Produce Co.

Los Angeles, March 19.—There is very little business in California honey at present, owing principally to the small stocks on the Coast. These are in the hands of holders who are not forcing sales, and the demand is correspondingly light. We quote the market as firm but quiet: Light amber sage, 6½@6⅝c; water-white alfalfa, 7@7¼c. All f. o. b. Coast with $1.00 freight rate by rail. Light amber sage, 6¾@6⅞c; f. o. b. steamer at San Diego, with 60c rate to New York via Tehuantepec. Hamilton & Menderson.

Denver, March 19.—We quote comb honey in a jobbing way at the following figures: No. 1, $3.05; choice, $2.90; No. 2, $2.70 Extracted honey, white, 9c; light amber, 8c; strained, 6¾@7c. We pay 26c in cash and 28c in trade for clean yellow beeswax delivered here.
The Colo. Honey-Producers Ass'n.
F. Rauchfuss, *Mgr.*

San Francisco, Mar. 20.—The demand for comb honey has not been so marked, although plenty has been offered, and the prices are as follows: Fancy No. 1, 15@16c; No. 2, 13½@14½c; dark comb, 11@12c; water-white extracted, 8@8½c; light amber, 7½@8c per pound; amber, 6@7½c; lower grades, 5@6c Beeswax, 27@30c for nice yellow wax, and 23@26c for dark. John C. Frohliger

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PENN G. SNYDER
Swarthmore
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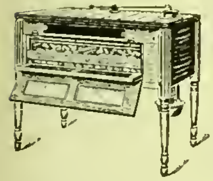

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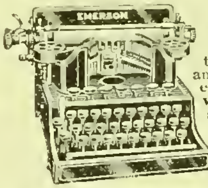

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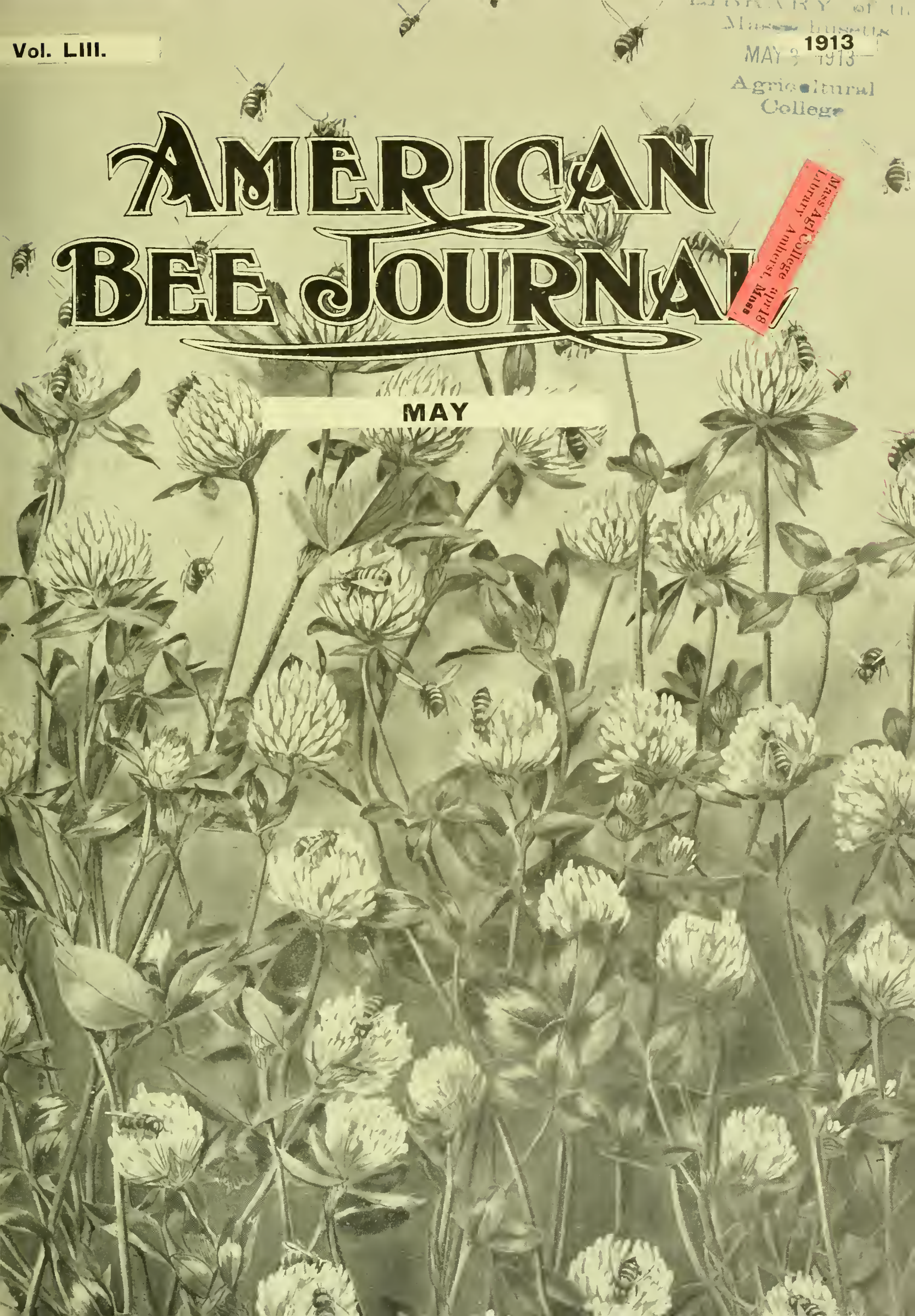

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BEE JOURNAL

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Catalog free.

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For readers of the old American Bee Journal interested in this part of our great country, we will be glad to answer enquiries, or send our *free* Circular, which gives considerable information that is reliable about this locality.

There is much interest manifetsed by people living in the Eastern and Southeastern parts of the United States in this great and growing Northwest, which is destined to be occupied by many wide-awake people who are looking for a new home, and where opportunities for advancement are greater than in the older and overcrowded parts of our country. Let us hear from you, if you are thinking of making a change. Lots of unoccupied bee-territory in this county.

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This is the title of a 16-page circular, 3½x6 inches in size, gotten up for selling honey. It contains an article on why honey should be eaten, which gives much valuable information on honey. It also has many recipes for the use of honey, both as a food and as a remedy. It ought to be distributed freely among honey-customers. The prices are as follows:

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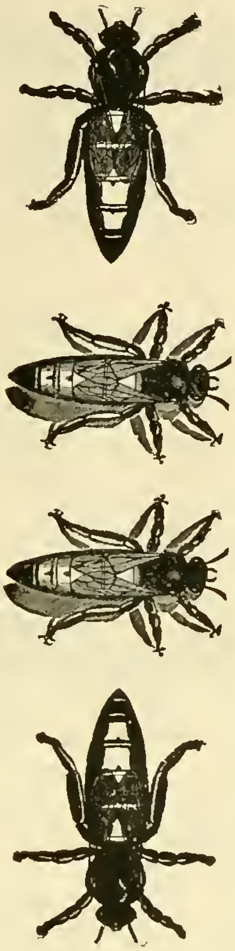

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Riddle, Oreg., July 4, 1912. L. W. Wells.

American Bee Journal—
Gentlemen:—The queen you sent me came in good condition. She was one of the best I have ever bought. I have her introduced and she is doing business as if to the manor born I want another of those beautiful queens as soon as I can possibly get it for making up my fair exhibit. Please send a fine one. Such queens certainly advertise your business.
Darlington, Wis., July 31, 1912. C. R. Bridgman.

American Bee Journal—
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Portales, New Mexico, July 10, 1912. J. W. Houtz.

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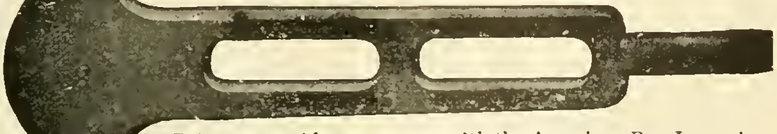

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This is a special tool invented by a Minnesota bee-keeper, adapted for prying up supers, and for general hive and other work around the apiary. Made of malleable iron, 8½ inches long. The middle part is 1 1-16 inches wide, and 7-32 thick. The smaller end is 1⅞ inches long, ½ inch wide, and 7-32 thick, ending like a screwdriver. The larger end is wedge-shaped, having a fairly sharp, semicircular edge, making it almost perfect for prying up hive-covers, supers, etc., as it does not mar the wood. Dr. C. C. Miller, who has used this tool since 1903, says: "I think as much of the tool as ever."

American Bee Journal, Hamilton, Illinois.

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Editor—C. P. Dadant, Hamilton, Ill.

Business Manger—M. G. Dadant, Hamilton, Ill.

Known bondholders, mortgagees, and other security holders, holding 1 percent or more of total amount of bonds, mortgages or other securities—None.

C. P. Dadant, Editor.

Sworn to and subscribed before me this 24th day of March, 1913.

T. R. KLAY,
[SEAL.] *Notary Public.*
(My commission expires March 25, 1915.)

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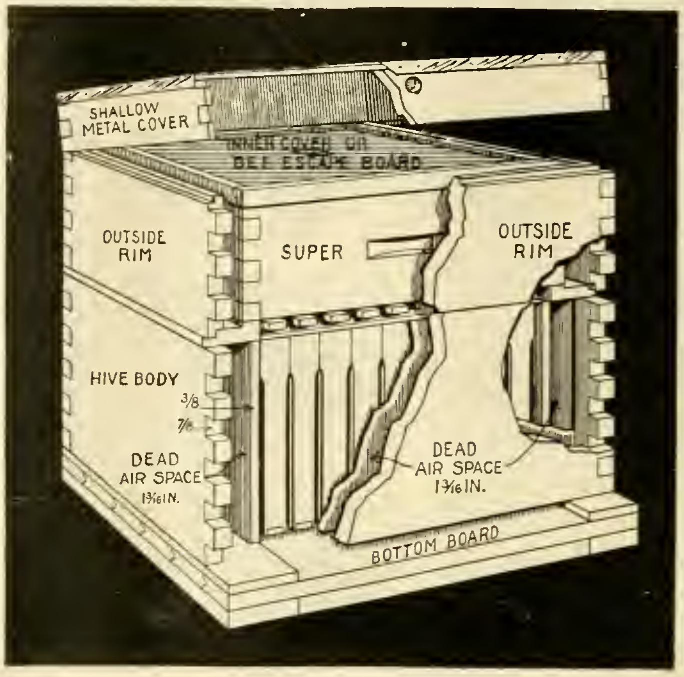
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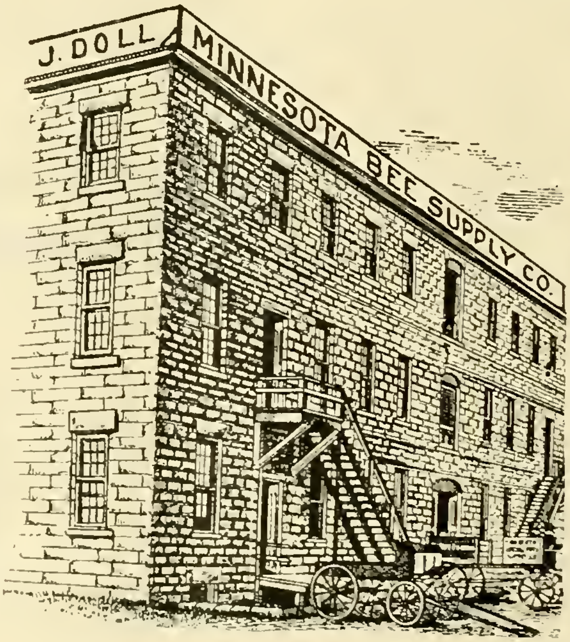

The picture that we showed in the last issue of this Journal was of our mill and property at Buffalo, Minn. This cut shows our factory at Minneapolis.

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AMERICAN BEE JOURNAL

(Entered as second-class matter at the Post-Office at Hamilton, Ill., under Act of March 3, 1879.)

Published Monthly at $1.00 a Year, by American Bee Journal, First National Bank Building

C. P. DADANT, Editor.
DR. C. C. MILLER, Associate Editor.

HAMILTON, ILL., MAY, 1913

Vol. LIII.—No. 5

EDITORIAL COMMENTS

Comb vs. Extracted

On page 93, Mr. B. Keep urges that effort should be made to popularize and increase the demand for extracted honey. He is quite right in this. But in doing so he expresses some views regarding the difference between comb and extracted honey that seem hardly warranted.

He says: "Only a very moderate quantity [of comb honey] can be eaten by each individual—a little satisfies, and the cost is more or less suggested by the gingerly small portions served to each person. There is, on the contrary, an unlimited field for extracted honey." It will probably be no unfair interpretation to say that Mr. Keep means thereby to say that it takes a much less quantity of comb honey to satisfy the appetite than it does of extracted honey, and that when comb honey is served at the table, it is served in "gingerly small portions," and extracted honey in "unlimited" amount. Whatever may be the custom in some localities, "in this locality" the usual thing is to pass the dish containing the section, each one helping himself to all he wants, although sometimes a separate portion is dished out on a small dish, in which case there is always a liberal helping.

Is not the idea that it takes less comb than extracted to satisfy the appetite something entirely new under the sun? Some prefer comb to extracted, in which case it may take more comb than extracted to satisfy, and *vice versa*: but taking consumers in general, if Mr. Keep has a scintilla of evidence to prove that it takes less comb than extracted to satisfy, let him produce it.

Let us do what we can to increase the sale of extracted honey, but let us not make the mistake of trying to do so by disparaging comb honey.

C. C. M.

Dr. Miller's Plan of Rearing Queen-Cells

In the January number of the American Bee Journal, mention is made that a facsimile of the illustration of the Doctor's plan of rearing queen-cells appeared in the New Zealand Farmer, taken from the August front cover. You might also have read the suggestion made regarding the comb of eggs to be supplied instead of foundation in the first place.

I am responsible for the article, and the suggestion I then made has since been demonstrated in practice with complete success, and I consider the plan excellent for amateur and others for home queen-rearing.

My plan is, instead of giving strips of comb foundation in the first place, *a la* Dr. Miller, on which, as the Doctor says, the bees are likely to fill up the gaps with comb, I get a bright, clean comb filled with the eggs I want, and then cut out the strips. The removed strips can be put into another frame to save waste. The frames of strips are then put into strong colonies prepared for queen-rearing by removing the queen, unsealed brood and eggs, when, of course, cells are built on the strips. In no case out of half a dozen trials that have been made at one of our Government apiaries, have the gaps between the strips been filled with comb.

This, I think, is a great improvement, and I would like Dr. Miller to try it.

I. HOPKINS.
Auckland, New Zealand.

Friend Hopkins, unless I misunderstand you, I used the plan you mention before I used my present plan, and having full opportunity to compare the two, I greatly prefer the latter. I suspect that you have not tried both, and that if you should do so you would prefer my plan. You speak of my giving strips of foundation, and then speak of the bees filling up gaps with comb as something objectionable. That sounds as if you suppose the bees are expected to start cells on the foundation. Not at all. No cells are built on the foundation, and none are desired, and no comb is built that is objectionable. I merely use foundation to show the bees where to start building comb, using two starters in a frame so as to get a larger contour. Then the bees build out just the virgin comb that is wanted, with young larvæ and eggs at the outer edge of the comb, precisely where the bees prefer to have them for queen-cells.

You speak of removing unsealed brood and eggs from the queenless colony that is to build the cells. I do not find that necessary. The tender comb that is built with larvæ just hatched at its outer edge is so much to the bees taste that they do not care much to start wild cells on the old combs, and if 2 or 3 should be started, there is no need to use them. If you have not already done so, I wish you would try this plan and see if you do not like it.

C. C. M.

The method advised above by Mr. Hopkins is very similar to the Alley queen-rearing method, given in his "Handy Book," now out of print and reproduced in "The Hive and Honey Bee," paragraphs 528–9. In the picture of the August, 1912, number, four strips were used instead of two starters, as advised by Dr. Miller. C. P. D.

Sunshine and Clover Leaves

Did you ever watch the little white clover at sunset and notice that all its leaves, almost without exception, have their surface turned to the setting orb?

Plants love sunshine, and they show it. When the sun rises, every leaf of the white clover, and of a number of other plants turns towards the Orient, to salute the first rays of Aurora, and to bask in its beams. As the sun moves in its course, every leaf follows the gradual motion, and at sunset all are facing the west, turning back again to the east at the early signs of dawn.

Flowers worship the sun, for the sun is their life. How many flowers would exist in a country where the sun was constantly hidden by clouds, mist or fogs? How much honey would be produced there?

Characteristics of European Foul Brood

I am not without hope that the contradictory views regarding the odor of European foul brood may yet be cleared up, but there seems no great tendency in that direction just now. So far it seems to be a matter of nationality. If a man says the odor of European foul brood is unspeakably vile, you may know that he fights under the British flag (or some other foreign flag), and if he says the odor of European foul brood is hardly worth minding, you may set it down at once as certain that he swears by the stars and stripes. The latest to express an opinion is L. Harris, page 54, and you may know that he is a Britisher without looking at the end of the article for his address when you read: "I say the poorest quality of glue is quite fragrant in comparison with an advanced case of European foul brood."

The thing, however, which especially caught my attention in Mr. Harris' article, is that when giving the marks of European foul brood, he says the larvæ are black, brown, or gray. "In this locality," when looking for European foul brood, the one thing we look for is *yellow* brood, or at least yellowish. To be sure, in a more advanced stage it may be brown or black, but the outstanding feature is the yellow color of the larvæ that are yet soft. Yet not a word does Mr. Harris say about the yellow color. In view of the great difference of opinion as to odor, and now this further divergence as to color, the question comes up afresh, "Are we really talking about the same thing?" How is it about the matter of color up Mr. Pettit's way? C. C. M.

J. Henri Fabre

The American Magazine, in its March number, gives a photograph and a short biography of Henri Fabre, whose works we have quoted twice the past season, in the September and November numbers of the American Bee Journal. The Literary Digest reproduces the photograph with quotations from his observations upon "How the Tartantula Slays the Bumble-Bee." The works of this aged and wonderful observer are just beginning to be appreciated, after a long life of comparative obscurity. His "Souvenirs Entomologiques," which are now translated into English, consist of ten volumes of observations of the most minute sort of the habits of insects, including the hymenopters. He is mentioned as "the greatest living naturalist," wrote as interestingly as a poet, and yet at 90 years of age "almost starved to death." He lives in southern France.

J. H. Fabre in His Study.

Where the Great Naturalist Lives.

We have secured from one of his friends his latest photograph and a partial view of his home, which we consider of value, although faint in the execution.

Smoke in Bee-Cellar

If any one had asked me a month ago what I would take to have my bee-cellar thoroughly filled with smoke at the time of taking in the bees, I might have replied, "I wouldn't do it for fifty dollars." Since reading the article of E. S. Miles, page 59, if I were asked that same question, I might shade those figures considerably; possibly cutting down the amount to twenty-five dollars, with five percent off for advance payment. I'm like Josh Billings, "so many things I know ain't so" that it is quite possible I am wrong and Mr. Miles is right.

And yet, much confidence as I have in Mr. Miles, it is hard to believe that no harm can come to bees from having the cellar so filled with smoke as to set one to coughing. To be sure, he says he has used these methods on hundreds of colonies for over 10 years, and assures us that no damage results. But how can he be sure about that? The fact that the colonies have lived through the winter, and have come out in good condition does not prove that they would not have been in a little better condition without the smoking. We are cautioned not to use smoke unnecessarily when working at the hives in summer. What harm can it do? For one thing it makes the bees gorge themselves with honey, and if that does no harm out in the open air, it results at least in some waste. A good deal greater harm I suspect comes from the fright and the effect on the nervous system of the bees, so that I have seen them deposit their feces on the combs and top-bars—a regular case of diarrhea on a hot summer day.

Now if this is so objectionable that we are always advised to be saving of smoke out in the open air, will it not be a good deal worse when there is no open air to be had, but when the whole cellar is saturated with smoke to the coughing point, and that condition is continued not during 5, 10, or 15 minutes, as when working at a hive in the apiary, but during the whole time the bees are being carried in? If a colony is pretty nearly scared into a diarrhea upon being carried into the cellar, and then comes out alive and well in the spring, there is still room for the suspicion that it might have been in just a bit better condition if it had never had the scare. If, however, Mr. Miles had some proof for his belief, I am open to conviction, for there are times when it would be convenient to use smoke in the cellar in the fall, just as I have found it convenient to use it there in the spring. C. C. M.

National Grading Rules

We give in this number the National Comb Honey Grading Rules adopted at the February meeting. We also insert an article from the pen of one of the best experts on honey, Mr. Frank Rauchfuss, of Denver, accompanied by cuts which illustrate his explanations. His criticisms are kindly, they are a result of his personal experience, and we know every reader will give them due consideration, for we are all anxious to get the best possible rules, and such as will fit every section of our immense territory. Much progress in this line has already been achieved, though perfection may never be attained.

Editor Digges and Bee-Terms

In a former number of this publication the effort was made to show Editor Digges that he was not following the dictionary by writing "honey bee" and "humble bee." What do you suppose is his reply to our kindly efforts to reform him? He blandly says that "there is no such volume as 'The dictionary.'" So there you are. Then after using considerable logic to justify his usage, he just as blandly says: "The whole question at usage is not one of logic, but one of convention." That from a man so unconventional as to write "beekeeping" all by his lonesome, with no one in all the wide world in convention with him! He says: "We find no authority, dictionary or otherwise, for the extraordinary form "humblebee," and especially mentions the Standard Dictionary as not giving that form. Must be another case of "locality." "In this locality" the Standard Dictionary certainly does give "humblebee," as also "bumblebee," and no other form is given for either of the words. (1893 edition.)

With regard to some of the inconsistencies of the American Bee Journal, perhaps the less said the better. Only it may be permitted to say that the excuse for writing "nowadays" was one of pure ignorance. As "nowadays" was the only form to be found—beg pardon, Bro. Digges, in a dictionary, we were ignorant that it was ever written in any other form nowadays. One other criticism it will hardly do to let pass. It is the supposed inconsistency of writing "Bee-keeper" and not writing "Bee-Journal." Surely it ought to be recognized that the latter is a proper name, hence not subject to rules that apply to other words. For instance, one cannot change the form of the word "digs" without awakening a suspicion of illiteracy, except it be used as a proper name, and then it may be changed into "Ddigss" or into any other form to suit the fancy.

Here's a package of good wishes to you, Bro. Digges, to the extent of 11 pounds, all that our parcel post will at present allow. C. C. M.

Life Membership in the National

The National convention appointed a committee to investigate the advisablity of accepting life members at a certain price, paid in advance. In 1891, resolutions were passed to accept life members at $10, and the following became life members of the Association, which was then known under the name of North American Bee-Keepers' Association: Thomas G. Newman, D. A. Jones, A. I. Root, E. R. Root, J. T. Calvert, Chas. Dadant, C. P. Dadant, Dr. C. C. Miller, Chas. Muth, A. N. Draper, Mrs. L. Harrison, Eugene Secor, G. H. Knickerbocker, A. R. Coe—14 members in all. At least five of these people are now dead, and some of the others have continued to pay their annual dues as if their life membership was of no avail. Nothing new under the sun!

Iowa Law Passes

Notice has been received that the Iowa Foul Brood law has been passed with appropriation of $1500.

MISCELLANEOUS NEWS ITEMS

Don't Spray During Bloom.—"When to Spray" is the title of a little folder by Mr. Frank Rauchfuss, of Denver. It quotes the following different authorities:

Prof. Gillette says: "When the codling moth begins to appear about the time of full bloom, they do not begin to lay eggs until the majority of the apples in the orchard are one-half of an inch in diameter; when they are ¾ of an inch they are laid freely. As soon as the little apples lose their fuzzy coverings the moths lay their eggs very largely upon the cheek of the apple, but *never in the blossom*. Later they find their hiding place in the blossom end of the apple. After the blossoms have fallen and the apples have attained a little size, *is the time to spray and not before*."

Prof. Gillette, who wrote the above, has raised these moths in great numbers at the Government Experimental Station, and is considered the best authority on this subject in the West.

In Bulletin No. 89, from the State of New York Experimental Station, we find the following statement: "The trees should not be sprayed while in bloom, for the spray may injure the delicate part of the flower." The Missouri State Bulletin No. 36 says: "Never spray a fruit tree while in bloom. You not only injure the delicate stigma and prevent pollenization, but you are in danger of killing bees." Bees aid largely in pollenizing all fruit trees and with other insect life are of great service to the fruit growers at this time of the year.

Greene's Fruit Grower says: "It is a positive injury to spray for the codling moth when the trees are in bloom." The Vermont Station prints the following advice: "Spraying when trees are in bloom is entirely useless; it is a waste of time and spraying material." The United States Agricultural Department at Washington sends out the following: "Pomologists may well join hands demanding and securing a law making it a grave misdemeanor to spray trees while they are in full bloom."

Canada has a strict law against spraying while fruit trees are in bloom Several of our States have passed similar laws.

Spray only when blossoms have fallen. Those trees that have blossoms on them at the time of the first spraying should not be sprayed until the time of the second spraying some 12 or 14 days later.

Illinois State Association.—The 12th Annual Report of the State Association is now ready for its members. It will be sent in cloth binding to all paid-up members. Later members will get a paper-bound copy. It contains the full report of the State meeting at Springfield and of the Northwestern at Chicago, as well as a condensed report of the National at Cincinnati. This explains the relation of the National to the affiliated associations.

A remittance of $1.50 entitles Illinois bee-keepers to membership in both the State and National associations, and they will get the Bee-Keepers' Review and the State Report. Subscriptions may be sent to either Jas. A. Stone, Rt. 4, Springfield, State Secretary; L. C. Dadant, of Hamilton, Secretary of the Chicago-Northwestern, or E. B. Tyrrell, of Detroit, Mich., Secretary of the National.

◆

Minnesota State Legislation.—A bill was prepared by the Minnesota Bee-Keepers' Association and presented to the Legislature for passage. This bill is very comprehensive. Among other things, it provides that the State Apiarist shall keep and care for at least 25 colonies at the State Agricultural College, for the purpose of experimenting, and also the same number at each branch Agricultural Experiment Station.

The aid of all bee-keepers is solicited in urging the passage of this bill.

◆

Thriving Apiarists in France.—Thanks to the kindness of Rev. P. Prieur, editor of the Revue Eclectique d'Apiculture, whose photograph we give, we publish views of the apiary and honey-house of Mr. Couterel, of Albret, in sunny southern France.

No. 1.—Corner of the Albret apiary of Mr. Couterel, with himself, wife, and two of their friends. The long blouse worn by the men is the customary working coat in the country.

No. 2.—The main work-shop with workers on hand.

No. 3.—The honey-room with a portion of the crop of 11,000 pounds of honey.

No. 4.—The Albret apiary.

No. 2.—Workshop of J. Couterel, of Albret in France.

Adulteration of Honey in Europe.—The great lawsuit in Hamburg, regarding adulterated honey has ended. The sentence was severe. Altogether the fines were 14,600 marks (1 mark 24 cents), besides the confiscation of 30,000 marks' worth of adulterated honey.—*Bienenwirtschaftliches Centralblatt.*

We also have a law in Italy against the adulteration of food substances, and if it is true that artificial honey is palmed off in Italy for genuine honey, bee-keepers who learn of this and are able to furnish sure proofs of the fact, ought, in the interest of all, to report the defenders.

Another condemnation because of selling adulterated honey (a mixture of a very little honey with syrup, sugar, and a yellowish coloring matter) is reported by the Berliner Markthallenzeitung.

The Bulletin de la Société Romande d'Apiculture, says that a Hamburg firm shipped to Switzerland 83 quintals (1 quintal 220 pounds) of honey, which the custom-house in Basel caused to be analyzed, and found that it contained 23 percent of water. As the Swiss law only permits 20 percent of water (the water which is found naturally in honey), the firm was fined, but it was permitted to take back the honey.

Would it be indiscreet to ask if the Italian customs officials use the same precautions?—*Translated from L'Apicoltore.*

The translator of the above items from l'Apicoltore, Milan, Italy, wrote the definition of honey which is embodied in the pure-food regulations of the United States. He was in favor of making 20 percent the limit of the percentage of water admissible in pure honey, but on this point was overruled by the chemical board that passed upon the matter, and the limit was fixed at 25 percent. It is seen from the item quoted that the Swiss government has a higher standard in this respect than our own.

◆

Quebec Provincial Bee-Keepers' Meeting.—This meeting took place March 27, Dr. Emery Lalonde presiding. Arrangements were made for honey exhibits at the coming November meeting, with premiums aggregating $14, at this meeting.

A request for a subvention of $300 was addressed to the Minister of Agriculture. Resolutions were passed requesting reports from the inspectors on their operations, and on the com-

No. 1.—Corner of the Albret Apiary.

No. 3.—Part of a 11,000 Pound Crop of Honey and Manner of Packing in France.

parative value of different races of bees. Also that the members be asked to experiment and report on the comparative advantage of natural and artificial swarming; and the best method of swarm prevention, these questions to be reported on at the next meeting.

The Minister of Agriculture was asked to authorize the inspectors to destroy the diseased colonies of bee-owners who neglect or refuse to treat them; to forbid the use of hives without movable combs because they cannot be examined; to prevent the importation within the Province of diseased or infected bees and appliances; to require every inspector to submit to an examination for competency; to have two additional inspectors appointed for the present season; to provide for lectures on apiculture during next winter.

Rev. P. Prieur, of France.

Bees as Cross-Pollenators.—Experiments have been recently carried on at the Kansas Experiment Station to determine the importance of the honey-bee and various other insects as factors in cross-pollenization. Wind was not considered in the tests because it was found that wherever apples were grown far from an apiary, a very much reduced amount of fruit was secured.

The Kansas Industrialist comments on the experiment as follows:

Two Ben Davis, two Missouri Pippins, and two Winesap trees were selected just before blossoming time, in an orchard in which several hives of bees had been placed. The object was to determine the number and kind of insects visiting the trees, and the time of day at which they were the most frequent. When the trees began to blossom, about May 1, men began making collections of insects found visiting the blossoms. The collections were made during the day and night. The trees were inspected at least once every two hours, and all insects found were captured if possible, and recorded if not.

A comparison of the number of insects captured and recorded, shows that the honey-bees were far more numerous than the other insects visiting the trees, and were more important than all the other insects combined. A number of bees were watched in order to determine the number of blossoms they would visit on one trip. One bee was followed until it had visited 61 flowers, and was then lost sight of in the top of the tree. Others visited from 25 to 45 blossoms.

Good Grading.—On our desk we find a page clipped from the Merchants' Index. We quote in short:

"Dumping an original package of goods that is subject to irregularity, and putting a straight price on it, isn't good store-keeping. A thing may be bought to sell at a definite price, but you can make it sell for more. At this writing, for instance, 176 Florida oranges sell at 30 cents a dozen. You are likely to find 5 or 6 dozen that are as large as 150, and should go in the 35-cent box. So you are 25 or 30 cents to the good. In a basket of lettuce you will find at least half a dozen different sizes, and by the same token you will get 6 different buyers. Separate it and mark it over."

How about doing this for sections of honey?

Misbranding of Confectionery.—On June 28, 1912, the United States Attorney for southern Ohio filed information against the members of the firm of Sauerston & Brown, of Cincinnati, Ohio, charging misbranding.

The product was labeled "Honey

CULTURE INTENSIVE DE L'ABEILLE

Miel, Cire, Hydromel Gros & Détail

J. COUTEREL, Apiculteur, BARBASTE (Lot-et-Garonne)

RUCHER D'ALBRET

No. 4.—An Apiary in Sunny Southern France.

Maples" on each package, and "Favorite Honey Maples" on each individual piece of candy. It was found to consist of a mixture of commercial glucose, sucrose, and cocoanut, and did not possess either in flavor or substance either honey or maple sugar.

The defendants entered a plea of guilty, and were fined $25.00 with costs of $14.65.

◆

School for Bee-Keepers.—The Extension Service of the Massachusetts Agricultural College has published a bulletin announcing a two weeks' school for bee-keepers, which will begin May 28. The school will be followed by a convention on June 11 and 12.

The faculty and the courses which they will give are as follows: "Practical Phases of Bee-Keeping," Dr. Burton N. Gates; "Crops for Honey-Bees," Prof. S. B. Haskell; "The Relation of Bees to the Pollenation of Plants," Dr. George E. Stone; "Structure of Bees," Mr. I. W. Davis; "Bees and Bee-Keepers' Supplies," Dr. James B. Paige.

Students will have the use of the regular apicultural equipment of the college, consisting of about 2 acres with 50 colonies of bees and a modern building constructed especially for the teaching of practical apiculture. Practically every device used in American apiculture will be shown, it being the aim of the department to procure new inventions as fast as they appear, for the purpose of study and comparison. A library of over 700 volumes and papers of apicultural literature will also be available to students.

The registration will be limited to 15, and applications will be accepted in the order received. A registration fee of $2.00 will be charged.

For bulletins or other information address Prof. W. D. Hurd, Amherst' Mass.

◆

Prizes on Color and Taste of Honey.—In "L'Abeille" de l'Aube, February, 1913, l'Abbé Cayatte complains that in giving prizes to bee-keepers for their honey too much importance is paid to the color and flavor of the honey. He says:

> Preference is usually given to the lightest colored and best flavored honey. Am I then a poorer bee-keeper because in a bad season my honey looks as dark as molasses? Can I change the nature of the blossoms of my neighborhood? While giving preference to light-colored honey of finest flavor, we should, in all fairness, have different series of light, amber, dark, and give to each similar prizes, provided they have been harvested by modern processes which secure extra-pure honey.

◆

Stung!—Not long since, a well-known business man had occasion to call his creditors together. He explained his situation, and asked for time in which to meet his obligations. This was granted. As the meeting broke up, some of the gentlemen present rallied the embarrassed man on the absence of his accustomed joviality. "Cheer up, old fellow," said one; "I know a man who has been stung hundreds of times, and made money out of the experience."

"You don't say!" exclaimed the astonished bankrupt. "What's his line of business?"

"He's a bee-inspector," was the reply.

◆

Toronto Field Day.—The annual Field Day of the Toronto Bee-Keepers' Association will be beld at the apiary of Mr. G. H. Sibbald, Forks of Credit Station, on May 24, 1913.

Mr. Morley Pettit, Provincial Apiarist, will have charge of the program. He will be assisted by some of our prominent Ontario bee-men, so that we confidentally expect this "meet" to eclipse anything heretofore attempted in this line in Canada Without doubt Mr. Sibbald's apiary lends itself to this educational work better than any other apiary within miles of Toronto.

A basket picnic will be held in connection with the meeting. The ladies will look after this department in their usual manner.

A program is now being prepared. The approximate train time table is as follows: Leave Union station 7:00 a.m. to 7:15 a.m. Arrive at the Forks at 10:00 a.m. Leave Forks about 6:00 p.m. Arrive at Union station about 9:00 p.m. Fare, round trip about $1.00.

A hearty invitation is extended to all bee-keepers, but be sure and bring a lunch. CHAS. E. HOPPER, *Sec.*

◆

A Foul Brood Law for Idaho.—A recent letter from Mr. Ben Hall, of Idaho, states that the bee-keepers have just succeeded in having a foul brood bill passed, known as House Bill No. 295. The bill is very effective. Any one intending to ship bees into Idaho had better get a copy of the bill before shipping.

◆

Wax Craft.—The British Bee Journal announces a second translation in Russian of Thos. Wm. Cowan's "Wax Craft." The book is certainly worthy.

National Grading Rules.—The following grading rules were adopted at the National convention in Cincinnati, Ohio, Feb. 13, 1913:

Sections of comb honey are to be graded; first, as to finish; second, as to color of honey; and third, as to weight. The sections of honey in any given case are to be so nearly alike in these three respects that any section shall be representative of the contents of the case.

I.—FINISH.

1. EXTRA FANCY.—Sections to be evenly filled, comb firmly attached to the four sides, the sections to be free from propolis or other pronounced stain, combs and cappings white, and not more than six unsealed cells on either side.

2. FANCY.—Sections to be evenly filled, comb firmly attached to the four sides, the sections free from propolis or other pronounced stain, comb and cappings white, and not more than six unsealed cells on either side, exclusive of the outside row.

3. NO. 1.—Sections to be evenly filled, comb firmly attached to the four sides, the sections free from propolis or other pronounced stain, comb and cappings white to slightly off color, and not more than 40 unsealed cells, exclusive of the outside row.

4. STANDARD.—Comb not projecting beyond the box, attached to the sides, not less than two-thirds of the way around, and not more than 60 unsealed cells exclusive of the row adjacent to the box.

II.—COLOR.

On the basis of color of the honey, comb honey is to be classified as: first, white; second, light amber; third, amber; and fourth, dark.

III.—WEIGHT.

1. HEAVY.—No section designated as heavy to weigh less than fourteen ounces.

2. MEDIUM.—No section designated as medium to weigh less than twelve ounces.

3. LIGHT.—No section designated as light to weigh less than ten ounces.

In describing honey, three words or symbols are to be used, the first being descriptive of the finish, the second of color, and the third of weight. As for example; Fancy white, heavy F. W. H.: No. 1 amber, medium 1 A. M., etc. In this way any of the possible combinations of finish, color and weight can be briefly described.

CULL HONEY.

Cull honey shall consist of the following: Honey packed in soiled second hand cases, or that in badly stained or propolized sections containing pollen honey, dew honey, honey showing signs of granulation, poorly ripened, sour or "weeping" honey; sections with comb projecting beyond the box, or well attached to the box less than two-thirds the distance around its inner surface. sections with more than 60 unsealed cells, exclusive of the row adjacent to the box, leaking, injured, or patched-up sections; sections weighing less than ten ounces.

BEE-KEEPING FOR WOMEN

Conducted by MISS EMMA M. WILSON, Marengo, Ill.

Taking Bees Out of Cellar Quarters

In this region the blooming of the soft or red maple is the signal for taking bees out of cellars, choosing the first day when the temperature is up to 40 or 50 degrees in the morning, with a bright sun, and the prospect of a higher temperature through the day. If the day be still, it is better, but a little wind will do no harm, if it is warm.

Occasionally the soft maples fool us, opening out in bloom only to be followed by a severe cold spell. This year the earliest soft maples opened March 30. (There may be a difference of several days between the opening of the earliest and the latest.) The weather was favorable for the next two or three days, but the bees were left in the cellar. Whether that was a mistake or not remains to be seen. It is pretty early yet, and if there should come such a freeze as there was 2 weeks ago, we will be glad the bees are in comfortable quarters. A few days delay can do little harm.

At the present date, April 4, we are having a snow storm. Yet the bees would not suffer if they were on the summer stands, for the temperature is only 36 degrees.

P. S.—The bees were taken from the cellar April 5. It would have been just a little better if they had been taken out 4 days sooner.

◆

A 5-Cent Watering Place for Bees

On page 115, a jug is advised for watering bees. We never used a jug, but have used a stone crock inverted over a dinner plate. The same thing is very convenient for feeding sugar syrup. Fill the crock half full with sugar, then fill up with water; put a woolen cloth, or several thicknesses of cheese cloth, on the crock, and over this the dinner plate upside down. With one hand under the crock, and the other hand over the plate, quickly turn the whole thing upside down, and your feeder is ready. The water will gradually dissolve the sugar. If part of the sugar is left undissolved, more water can be added.

A Bucket of Water With Floating Cork Chips.

For watering bees we now have something very much better. The picture shows a 5-cent watering place that cannot be excelled at any price. It is simply a candy or tobacco pail with cork chips thrown on the water. The cork chips come as packing for grapes in winter time, and can be had from the grocer.

Put the pail in a sheltered, sunny place, fill it with water, and then pour cork chips on top of the water, so that the chips are not so deep that the bees will not reach the water at all. In a day or so the chips will become wet on top, and you can add more. Have it so you can see the moisture of the under chips, yet so the tops of the chips are dry. After the chips are well soaked they may last without replenishing throughout the season.

◆

Equal Suffrage

A little out of the ordinary is the heading of a letter received by Dr. Miller recently from a bee-keeper at Arden, Neb. At the top of the page, at one corner, appears the name of W. H. Mills; at the opposite corner, Emma S. Mills. It looks good, too, showing proper appreciation.

◆

White-Clover Blossoms Yielding Nectar

A tramp over the pastures, April 4, shows an abundance of white clover, probably not exceeded in any previous year. Since there can no longer be anxiety as to the crop of white-clover plants, there remain two questions for bee-keepers in this region.

First, will the clover yield any nectar? There are years when the ground is white with clover bloom, and yet the bees get nothing from it. Just why, no one knows. Some claim that there is no nectar in the blossoms of the first year's growth. The plants that are now to be seen are not those that have just sprung from seed, but those of last year's growth. Indeed, they may be of several years' growth, for it must be remembered that white clover is a perennial. With the hopefulness of bee-keepers, let us wait until the first half of June, when the bees will not fail to tell whether nectar is to be had. We eagerly await this decision. If the white clover does yield nectar this year, there will be a lot of it.

Second, if there is a good yield from white clover, will the bees be in good trim for it? Good authorities tell us that we should know the resources of our own locality, so as to have colonies strong for the harvest—not coming to full strength before the harvest, nor after it has been some time in progress—keeping in mind that a bee goes afield some 37 days after it begins its growth in the egg stage.

There is little danger in this locality of building colonies up too rapidly in spring. Get them built up as fast as possible. There has probably never been a year when colonies were at fullest strength in advance of clover bloom. Some colonies might be exceptions if they were left entirely to themselves, but these extra early colonies are made to help build up their weaker sisters.

◆

Miss Candler Loses Her Mother

Miss Mathilde Candler, Wisconsin's woman bee-keeper, who counts her colonies by the hundred, has suffered an affliction in the loss of her mother, who died Dec. 20, after an illness of only 6 days, at the age of 77 years. Bee-keeping sisters will sympathize with Miss Candler, especially those who have lost their own mothers.

Miss Candler writes March 30: "The outlook for a honey crop is excellent, so far as clover is concerned. Bees need feeding though. They have drawn very heavily on their stores, and colonies that I thought had sufficient are very light."

We have also learned of the death of the mother of Miss Ida Kitt, at Albion, Ind., Jan. 11. Miss Kitt is a contributor to this department. Our sympathy goes to her also.

FAR WESTERN BEE-KEEPING

Conducted by Wesley Foster, Boulder, Colo.

A Dearth of Pollen

During the past week—the first week in April—I examined many colonies, and the larger percent of them are destitute of pollen. The dandelions have not yet come, and, until they do, the bees will be short. Some bee-men are using substitutes, such as flour, rye meal, etc., and it does help, when the bees go for it so eagerly.

The colonies that have no pollen have usually a large force of bees and considerable sealed brood, lots of eggs, and a few larvæ two or three days old, but none between this and the sealed. What does this show? That the bees used all their pollen in caring for the larvæ now sealed and hatching, and since that time, although the queen continues to lay, no brood is developed beyond larvæ two or three days old. With a condition like this it is reasonable to infer that artificial substitutes do good.

The time when there is no pollen is fortunately short—in 10 days we will have plenty of pollen-bearing flowers. This is near the foot-hills. The situation is entirely different farther from the mountains. We need surplus combs of pollen stored away for use as much as we need extra combs of sealed honey. This is one of the next questions in bee-management—how to get combs of pollen filled sufficiently to pay to store away.

* * *

Colorado as a Bee State

"Your name has been suggested as one to write to for information about Colorado as a bee State. Where is the most honey produced in Colorado; where is the market for it; and is it sweet clover or what quality of honey? Does any one make an entire living at it in Colorado, or is it only a side line?" MASSACHUSETTS.

The Colorado bee-territory is confined to the irrigated valleys where alfalfa *is grown*, and where sweet clover *grows*. I could not tell you where the most honey is produced, as one year one valley produces the most, and another year another. However, you can tell very nearly where the best locations are, by finding out where the most alfalfa is grown. It would be unwise to settle anywhere without first visiting the country and looking into transportation facilities, cost of living, climatic conditions, foul brood situation, etc. There is room for more bee-keepers in parts of Colorado, and these districts will welcome you, but there are drawbacks to all. The success depends upon the man. I am frank to say that I believe there is more money in bees in the eastern part of the United States than in Colorado for the up-to-date bee-man. We have marketing problems that do not trouble the eastern bee-keeper.

The market for our honey is in the States to the east, and partly in a local market. We have considerable trade in Texas and Oklahoma.

There are probably 200 bee-men in the State who make the larger part of their income from bees. I would not recommend bees as an absolute specialty. Every bee-keeper should have a small garden, some fruit, chickens, cow, etc.

One of the reasons why bee-men in in the West can care for from 300 to 700 colonies with but little help, is that during the working season we have a larger number of working days with but few storms to shut off work. Our wintering problem is not so severe as in the East, though we have our troubles along that line.

Swarming, sometimes, is a problem, and one bee-man last year said that he lost 75 swarms because the bees got the start of him. He had about 600 colonies, and harvested nearly a car of comb honey. He preferred to lose that number of swarms rather than keep less bees and catch all swarms, but harvest perhaps half as much honey. Western bee-keeping is more extensive than intensive.

* * *

Backward Spring in Western Colorado

Early April reports come from western Colorado that the season is cool and backward, and that bees are weak. It will take them a long while to build up for the honey-flow if this condition prevails. Otherwise prospects are good, there is snow in the mountains, and spring moisture is abundant. Sweet clover is coming up in good shape in eastern Colorado.

* * *

Feeding Bees Directly into Empty Combs

Herman Rauchfuss, of Englewood, Colo., showed me a pressure tank that is very handy for various uses in the apiary. It is a galvanized iron tank of about 15 to 18 gallon capacity. Near the top is an automobile or bicycle valve, such as is used in pumping up tires. An ordinary bicycle or automobile pump can be used in pumping air into the tank. The funnel at the bottom is equipped with a rubber hose 6 feet long, and a nozzle at the end similar to the nozzle of a sprinkling can. Now suppose considerable honey is granulated in the combs in the hives; pour in the tank 10 or 15 gallons of water, and pump in the air to give pressure. Wheel the tank from one hive to another, and spray warm water into and over the combs of granulated honey. The bees can make quick work of that honey.

Or suppose you wish to feed the bees thin syrup; put that in the tank, get in some air pressure and you can soon fill the combs with one to three pounds of syrup. It is better to fill these combs in a bee-tight room if the bees are inclined to rob. The combs may be filled over a tub or vat to catch all the drip. The tank can be used to force swarms to alight by having it nearly filled with water. The spray nozzle must be fine so that the diffusion of the liquid will be in small particles, as this is important whether feeding bees syrup or water, or forcing a runaway swarm to alight.

MR. HERMAN RAUCHFUSS AND HIS SON ON THEIR WAY TO AN OUT-APIARY.

* * *

Do It With Hired Help

Many of our western bee-men are busy scraping and cleaning separators and supers, putting up sections, wiring and putting foundation in frames. Too many of them do this work themselves when it would probably be better for them to hire it done and expand their bee-keeping operations. Nearly all the preparations for a crop can be done with hired help, and the bee-keeper can devote his time to the more important work of getting the bees in shape for the harvest.

* * *

Prospects for May

Should the weather conditions remain as they are now, this spring will be an "Alexander plan of increase" spring for western bee-men, and will give them a chance to fill hives that have been empty for several years. Several carloads of bees will be shipped into the State, and doubtless a good number of nuclei and pound packages also.

SOUTHERN BEEDOM

Conducted by LOUIS H. SCHOLL, New Braunfels, Tex.

April Swarming and Honey-Flows

The forepart of April is as warm as summer time, and bees are busy at work as though there had been no recent cold weather and delay in their brood-rearing. The cold snap the latter part of March was severe on the nectar-yielding vegetation, and consequently affected brood-rearing from the central part of the southern States northward. Letters from the southern portion of our own State say the bees are swarming, and that honey-flows are beginning. From the lower part of the State and the Rio Grande River valley came reports several weeks ago that the bees were so busy in a honey-flow that they had no time to think about swarming.

Does this compare with our northern cousins' conditions? We remember that several cold waves traveled from the northwest to the southeast, and we did not suffer to any great extent, or at least not as we usually do when the cold waves come from North to South direct.

All the bee-keepers agree that we have fine prospects. This, together with enquiries for early honey, is encouraging.

* * *

Bees and Chickens for School Children

The writer has been advocating the combination of bee-keeping and poultry raising for the school children, in his lectures at various high schools. There is a great deal in this combination, for children. It gives them an excellent opportunity to occupy themselves, and keep out of mischief. It provides an opportunity to make pin money for the time spent, and it is a combination that should be encouraged by the parents.

Another item that is valuable for the school child, is deciding early in life what trade or line of work he or she wishes to follow. Selecting one's life work early affords the opportunity to make use of many things pertaining to that following. This helps to make the selected work more easy and successful. It saves wasting much time during the school years on work of little value in their chosen field later.

If a child shows a leaning toward one line of work and continues to show this interest as it grows up, the parent should lend assistance in getting that boy or girl started with his or her special line of work. A child, with a few colonies of bees and some thoroughbred fowls, can make a successful combination out of the two that will be a pleasure and a profit.

* * *

Cultivation vs. Bee-Keeping

The question has been asked whether forage for our bees is decreasing where cultivation is increasing; and whether a "backwoods" region is the best place, excepting irrigated regions.

This depends upon the localities involved. At one time the writer feared of being put out of business because the land owners were clearing off their land and putting it into cultivation. These lands were covered with mesquite trees and other honey-plants. With these sources destroyed the forage might all be taken away. But cotton is the main cultivated crop in Texas, and, especially in the black lands, cotton yielded excellent honey-flows. These became more regular, season after season, than the original yield of nectar, abundant as well as of excellent quality. So it does not matter whether the mesquite prairies upon which we depend for our honey sources are put into cultivation, as long as they are made into cotton farms for the greater portion of the crops. Although corn does not yield nectar, it is also of importance to the bee-keeper since it yields an abundance of pollen.

Of course, the above would not apply in sections where the original flora is changed into vast wheat or other grain fields, as in north Texas. But if such territory is turned into irrigated alfalfa districts, as it is often, the honey yield may be improved materially.

However, the most ideal territory for bee-keeping is where still exists nectar-yielding flora in great abundance. The great number of varieties make up a succession of blossoming periods so that there is an almost continued nectar yield and a consequent steady honey-flow from the beginning of the year to the end. But even the wildest of these localities do not offer us ideal conditions. There are many wooded territories that are not adapted to bee-keeping for profit; we also find prairie lands not suited to this pursuit.

We have 10 apiaries on one of the largest rivers of Texas, the Brazos, where putting the land into cultivation proves of value to bee-keepers. The "bottoms" in the river valleys are heavily timbered, but the nectar is of inferior quality. However, these trees and shrubs yield pollen, and thus help the bees considerably. When the land is put into cultivation there are still enough trees left along the fences, in pastures, along the river banks, and about residences.

The main source is cotton, and there are thousands of acres of it in the large plantations. We have found the yield very regular during the 10 years that we have operated our apiaries in that section, although some years have been more favorable than others, owing to the difference in rainfall.

Outside of the cotton belt there are many localities where the cultivation of the land would mean an end to bee-keeping. Even where much cotton is planted in the sandy land districts, it does not yield nectar as readily, and that which is yielded is darker in color and not so good in quality.

In most of the southwest Texas territory, that scope of country that has been known as "the bee-keepers' paradise" for many years, cultivation of the wild lands would mean a decrease in honey yields. Then there is much territory that is being put under irrigation for truck crops, and these are not what the bee-keeper wants. Unless alfalfa is also planted in irrigated regions, even the coming of irrigation would not make it a better bee-keeping territory than it was before being under the plow.

CANADIAN BEEDOM~

Conducted by J. L. Byer, Mt. Joy, Ontario.

Double-Walled Hives vs. Tenements

I have had several letters recently from different parts of Canada, and the more northern States, asking what style of hive or case I prefer for outside wintering. I shall go into considerable detail in answering the questions, as it is a very important subject to decide upon by any one who contemplates wintering large numbers of colonies outdoors every year.

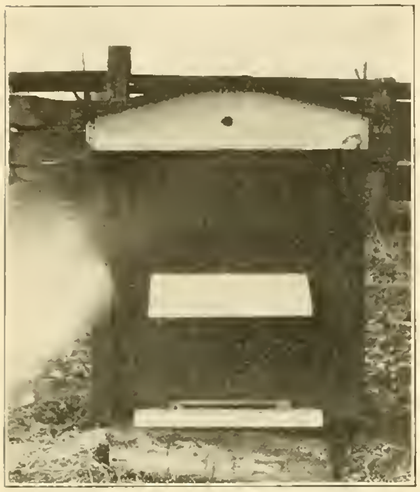
There are two plans in vogue here in Ontario — single-packed hives, or single hives packed in removable cases, and the tenement plan of two or more hives in one case, removing them in May and repacking in October or November. Of late years many Ontario bee-keepers are packing 4 in a case, and they have the bees facing all points of the compass. One case has the bees face 2 colonies north and 2 south, while the next case in the row will have 2 face east and 2 west. This latter plan is very popular, and from the matter of economy is the best plan yet brought before the public.

In my own apiaries I have tried various winter-cases, and while admitting that I am in the minority, I prefer the single hive to a tenement case. I like the hive permanently packed better than one in which it is necessary to unpack every spring and pack again for winter.

The chief argument advanced in favor of the tenement packing-cases is that they are cheaper than the single case, and warmer also, because the hives share the heat of each other. It is claimed that the bees in a case containing 4 hives will always cluster in the center of the quadrangle.

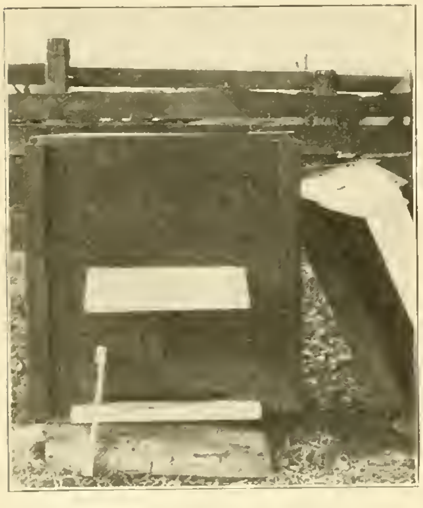
That they are cheaper than single cases cannot be disputed, but as to the benefits in wintering as compared with a single colony in a case, I am not so sure. While it seems reasonable that there must be *some* difference, this difference is so little as not to be apparent in apiaries where the two plans are tried side by side. Colonies wintered alone in a packed hive always come out as well as those packed two or more in a tenement case. While the tenement hives are cheaper to construct, they are not nearly so handy to work with. Packing the bees in them in the spring and lifting them them out in the fall is a back-breaking job. The packed hive is objected to because it is bulky to handle, but, on the other hand, the big tenement cases have to be stored in the summer, and in moving an apiary they are worse than the packed hives. When bees are moved in the spring, it is absolutely necessary to unpack them before doing so. A few days ago we got about 3 inches of snow, and in one day I moved over 100 colonies in single-packed hives about half a mile. It was easy getting these hives on a sleigh, but with large cases it would have been an impossibility.

While, as already intimated, I have various styles in my different yards, in the future all cases made for winter will be single ones, and the hives will be permanently packed so that no lifting *out* in the spring, or lifting *in* in the fall, will be necessary. The accompanying photographs illustrate the hive I prefer and expect to use in the future.



Mr. Byer's Favorite Hive.

I would give a good deal if all my bees were in this kind of hives at the present. Picture No. 1 shows the hive just as it has stood all winter; it has a strong colony of bees in it at present. Notice the block for contracting the entrance for winter—this gives an entrance of ⅜x10 inches. This can be varied to suit the bee-keepers' idea of size of winter entrance. I want nothing smaller for a strong colony.



The Same Hive With Larger Entrance.

Picture No. 2 shows the same hive with cover removed, and the construction of the outside case in view. This hive is a 10-frame Jumbo, and is the style and size I prefer for extracted honey, but the same style of hive could be made for any depth of frame or width of hive. One inch of sawdust in front and 2 inches on sides and back I find sufficient protection. In addition, the case is lined inside with heavy building paper. The bottom is loose, or fastened as desired. The *outside* posts are made of 2-inch stuff, with ¾ of the material sawed at right angles, leaving the pieces the shape of an old-fashioned eaves trough, two sides at right angles.

The *inside* posts are one inch square, and in nailing the outside sheeting, the nails pass through the outside posts and into the inch square posts in the corner. In this manner the siding is held in place *under* the corners of the outside posts, and cannot warp or twist. The outside sheeting is of ½-inch cedar; a wood very light and very lasting, especially if kept painted. The outside case is high enough to take one full depth or two half depth supers, and when the cover is in place bees will stay in the super when they would desert the super of a single hive, no matter how exact the joints between hive and super. Little work is required to prepare the colony for winter. I usually put enough dry sawdust in a bran sack to make about 4 inches deep over the frames when spread out. Any other packing commonly used will answer the purpose as well. In picture No. 2 the entrance block is removed for warm weather, thus giving an entrance 1x12 inches. I have no use for a larger entrance.

There is nothing original about this hive, as a local manufacturer has been making them for a number of years. The corner posts are a good thing, and if any one is thinking of making hives of this style, a trial will convince them that this scheme solves the problem of how to keep thin siding from loosening at the corners. The covers telescope one inch, and when in place the space above the brood-nest is bee-tight. This is a valuable factor in fall feeding, as any kind of top feeder can be used with no danger of robbing. If weather is cool, feeders can be well covered; the space above is very handy for that.

Dysentery—Honey-Dew ?

The following letter may concern other bee-keepers. I give it just as received:

"Three years ago I had 70 colonies on summer stands in 10-frame double-walled hives. The bees were extra heavy, and in the spring 22 were dead, while inside of the hives, combs and frames were all plastered with dysentery, and in fearful order. I then cleaned the hives and frames the best I could, and hived young swarms on them, increasing to 63, which I packed in good shape. When spring came there were 36 dead, with the same smear of dysentery; it looked like strong tobacco juice. Some had from 2 to 6 full combs left weighing up to 6 pounds. I cleaned them and gave to young swarms this last season, increasing to 75, and have them packed in winter quarters in the same way. They are all alive now but 4, which have the same odor. They were light in stores last fall, so I am now feeding section honey in the super chamber under the packing.

"Will you please tell me whether the dysentery was contagious from the use of combs and hives?"

My opinion is that the condition commonly called "dysentery" in bees is not contagious in the sense that we ordinarily use the term. I am doubtful if dysentery is really a *disease*; it is rather a condition brought about by abnormal surroundings, such as a long spell of cold weather, the bees being forced to subsist on stores for some reason unsuited to their use.

Only once have we had an experience like that described, and that was following a season when honey-dew was carried into the hives freely in August. The condition was pretty general all over Ontario, and many bee-keepers vowed never to let their bees go into winter quarters on such stuff again. I have an idea that this same trouble caused all the dysentery in the case above, and if I understand the letter right, many of these swarms went into the second winter with combs full of this same deadly stuff, and again its effects were felt.

I remember after our heavy loss referred to above, that increase was made on the same combs, but being fearful of losses after our recent experience, heavy feeding of sugar syrup was practiced. Some of the soiled hives had been cleaned none too well, but the bees wintered well, which would go to show that there is no contagion in dysentery. I cannot give positive evidence on this, and if I had a heavy loss like the one above, I would see that none of that same honey went into a hive the next winter.

More About the Double-Walled Hives

[We are of your opinion. Dysentery, or more properly diarrhea, is not contagious.—Editor.]

Bees have wintered well here, and clover also, up to the present. We are anticipating a good crop, for whoever heard of a bee-keeper who was not *hopeful*, especially in the spring-time?

In what I have written of the merits of single-packed hives as compared with the tenement plan, I omitted one of the good points of the former, that these single hives may be left with the top packing on as long as desired. In the tenement hive, when removing the colonies in the spring, *all* must come out at the same time, no matter if some colonies are weak and others extremely strong. We have many colonies that require supers in fruit bloom, while others are not yet ready for them. With single hives it is an easy matter to give strong colonies room. Those not ready can be left with the packing on until they are stronger.

Examining Colonies for Winter

On page 136 of the April American Bee Journal, a correspondent from Ontario says that Jan. 1 he found brood in one of his colonies, and later, that over one-half of them had started brood-rearing. How in the world did he see this? Surely, the colonies were not examined at that date, here in Ontario? Early, unreasonable manipulation of bees causes the death of many good queens each year. It is a good policy to leave the bees severely alone in the winter months, as it is very likely to cause a lot of damage.

At this date, April 4, I have not troubled to look inside of a hive aside from lifting the quilt at the back to see that there was sealed honey. Any examination more than this would do no good, and might result in balled queens.

BEE-KEEPING IN DIXIE

Conducted by J. J. Wilder, Cordele, Ga.

How to Keep Pure Stock—Supers

"I have 14 colonies of mixed bees, and I would like to keep pure Italians. If I buy queens, how must I handle them to keep them from mating with drones I have now? Also, is it best to keep one or two supers on the hive?"

Gonzales, Tex. Joe Grasse.

Italian stock of bees is hard to keep pure, and to keep them so you will have to look after them very closely. Buy tested golden queens, one for each colony, and introduce them according to directions. If you are successful you will have pure stock for this season, for the queens are already mated, and your black drones can have no effect on your stock. Your next season's drones will be pure. When the bees begin swarming you will have young pure queens, and they will be purely mated provided there is no more black stock near you. If there is, your young pure queens are liable to be mated with them. The progeny will be a cross. But if you get the best yellow stock obtainable, this cross will not show up much the first generation. The next cross will, and colonies containing such queens will have to be replaced with pure stock again. If you stock with the goldens I believe you would also like the first cross.

It is always best to have more supers in readiness than you think you will need, and not only give your bees two supers, but as many as five or six if they should need them. This can best be done by raising the supers they have and slipping another under, next to the brood-nest, and so on, as soon as the bottom super gets well started. Swarming will be reduced and larger crops of honey harvested.

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Worthless Swarms

These issue near the close of the honey-flow, and cannot build up. They soon become discouraged and swarm out, or dwindle to nothing. They may do well if they are looked after and given combs of honey and brood from the strong colonies.

Such swarming could be avoided by not allowing the bees to become crowded for storing room. If an extra super were given next to the brood-nest a day or so before the flow declined, in most cases it would be covered and an extra super of honey finished.

If a swarm issues a few days before the close of the flow it will leave the parent colony with a lot of uncapped honey which, likely, will be unfinished and not marketable, if it is comb honey. It is important to keep the bees supplied with plenty of storing room.

If a super be added near the close of the flow the bees will disregard it and finish what they have started. The last super should be added just when the flow begins to decline.

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A Mangrove Location

"Mr. Wilder:—I want to get into a good mangrove location along the east or west coast of Florida and start a bee-business. Can you refer me to a good location?" John P. Jones.

Medina, Ohio.

I have not much regard for the mangrove as a honey-plant, nor for the section where it grows as a bee-country. The mangrove is a very uncertain source of honey, and the honey is poor in quality, very thin in body, and ferments badly. However, the best locations for it can be found along the Gulf of Mexico border of Lee Co., Fla. There are numerous islands along the bay and gulf, and it grows in great quantities.

Mrs. H. D. Brainerd, of Captiva, Fla., who is a bee-keeper there, can give more complete information.

I like the lake regions through the center of the State better.

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Prospects in Dixie

Weather conditions have not been very favorable, but bees have been making good progress in brood-rearing and in sections where the flow is early; considerable surplus has been stored. The flow is still on, and an average crop will be produced.

Bees were in good shape when the first honey came, and a lot of swarming has been the result. Little surplus can be expected during the spring flow, but the later honey-flows should aid materially.

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Florida

The following is an extract from a letter written to Mr. R. L. Landrum, of O'Brien, Fla., and referred by him to the Dixie Department for answer:

"How do you like the Italian bee for your section? What is the quality of honey produced? What does it bring on the market? What is the average per colony? Do bees have any enemies there?" R. X. Smith.

Columbia, Iowa.

Most of the honey produced in that section of Florida is thin in body because the nectar contains a great amount of water. It requires much evaporation. The Italian bees are far behind when it comes to reducing nectar to honey. The honey is light in color and of good flavor, and the darker races of bees give it a good body. The first flow of honey is from the chincapin. This honey is of poor quality, hardly marketable, but increase can be made and combs built to good advantage.

The marketable honey brings about 10 cents per section. Owing to the thinness of the honey when stored in ready-built combs, not much extracted honey is produced.

The average is about 40 or 50 pounds of marketable honey per colony.

Bees have no great enemies there.

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Better Bees and a Companion

"Mr. Wilder:—We only have the common black bees in this section, and they do not give us satisfaction. We want the very best strain or race obtainable, and we want you to recommend it to us. I am a bachelor, and I want a companion. Will you recommend some one? I am worth $3000 or more. This is a newly settled section." Wallace Jones.

Trenton, Fla.

I fully appreciate the great confidence you place in me. You are confronted with two very serious problems. I will help you to solve one, and ask some of our lady readers to help you solve the other. Either the Italian or Caucasian bees would give you better satisfaction. I am partial to the latter. You can obtain bees from those who advertise in this paper.

SKETCHES OF BEEDOMITES

Death of Oliver Foster

Oliver Foster was born in Grant Co., Wis., March 21, 1857, a few miles from Platteville, the home of Edwin France. The family moved to Mt. Vernon, Iowa, when he was about 11 years of age. His older brother, Alonzo Foster (my father), was interested in bees in a limited way, and the two talked bees and read all they found in the farm papers. They finally got hold of the American Bee Journal and Gleanings in Bee Culture.

One winter, when they had an apiary of about 20 colonies, all died. My father then dropped the work for a number of years, but my uncle built up again and increased until he had about 300 colonies. His first swarm was hived from a stump when he was 14 years old.

He was always experimenting, and designed hundreds of little devices for bee-work. Some of the earlier inventions were patented. He once told me that he had received from the sale of patented articles about what the patents had cost him. During the last 20 years he patented nothing. He never talked much, but would test out his inventions, and if he did not like them, discarded them without further ado—the world none the wiser for his experiments.

The Late Oliver Foster.

During his bee-keeping life he was successful in securing hired help to do a large part of his bee-work. He said that he would rather have a big, strong boy 18 to 20 years of age, who was not afraid of bees, and who knew nothing about them, than a man who had worked with bees for years and had his own methods of bee-keeping firmly fixed. Such a boy could and would follow his instructions, while the older bee-man would be more or less independent in his ideas. When his men had worked for him several years, he would sell or lease to them some of his bees. At the time of his death he owned bees in Oregon, Idaho, and in three counties in Colorado. In all, he owned or invested in over 1500 colonies.

In May, 1894, he moved from Mt. Vernon, Iowa, to Las Animas, Colo., taking two carloads of bees and supplies with him. That year he harvested about 45 tons of honey. The largest yield, per colony, he ever had was about 300 pounds of extracted to the colony for about 300 colonies. He was systematic in his work, and all supplies must be uniform and interchangeable. There is not in any of his apiaries that I know of a cover that is larger than the top of the hive. The bottom-boards are equally simple. Covers and bottoms were soaked in oil before painting.

While operating his apiaries at Las Animas, he had such a system developed that he seldom visited the apiaries—all the work was directed from home, and he looked after the business and sale of the honey.

He has demonstrated that it is possible to operate bees as a commercial proposition—his net income from leased bees for a term of nearly 20 years averaging somewhere between 10 and 15 percent annually—and some serious failures have occurred during that time.

Not being robust, he found it necessary to save his strength. This is one reason why he always sought hired help that would follow directions to the detail—he wished to be the brains of his enterprise, if he could not supply the muscle.

He was a leader in church and Sunday school work. At the time of his death he was a member of the official board of the First Methodist church of Boulder, Colo.

It is hard to go through his honey-house and shop and realize that he is no longer with us. His little devices and methods of work stand out with almost the reality of a living presence. We miss him sorely. He is survived by a wife and two daughters, Faith and Ruth.—Wesley Foster.

CONTRIBUTED ARTICLES

Avoiding Being Stung

BY G. M. DOOLITTLE.

A CORRESPONDENT writes thus: "Will Mr. Doolittle tell, in the American Bee Journal, about working with the bees so as to avoid being stung as much as possible. Also tell us why bees sting some people so much worse than others."

A thorough knowledge of the habits and wants of our pets, the bees, has much to do with the number of stings we get. If we make a close study of the habits of the honey-bees, and the causes that induce them to sting, we will at once recognize that quick motions, under most circumstances, are liable to arouse their ire and make them sting. By going slowly, in opening hives, or when within the range of their flight from the entrance or doorway of their home, one can do almost anything with bees. But if one works in a peculiar jerking, rapid way, throwing the arms in the air, or stamping about in front of the hive, one is liable to get stung badly.

If the motions are regulated to the whims of the bees, and the work among them done from the back side of the hive, or out of sight of the entrance, a person will get along with few stings.

Then the weather must be taken into account. If the day is warm and the sun shinging brightly, with plenty of nectar coming in from the fields, it is no trick for the experienced bee-keeper to be at work continuously from 8 a.m. to 5 p.m. and not receive a single sting. This is especially true up to the middle of the first flow of nectar, which is of sufficient amount for the bees to store quite a surplus during any season. I have worked for a whole week previous to the middle of the harvest from the white clover bloom without receiving a single sting during all the season up to July 1, at which time the basswood harvest is generally approaching. But I did not work any more than I could help on what some bee-keepers call "off days," such as a cool day after a rain; a day following a sudden stoppage in the flow of nectar, and *never*, unless it was a case of actual necessity, when the bees from any reason were robbing.

If obliged to do certain things on these "off days," it is always best to wear a veil and take the smoker with you. And it is best to make sure that the smoker is in good order, ready to give a good volume of smoke at a moment's notice. Be sure you do not jerk off the hive cover so that the whole colony is aroused, for under such usage stings can hardly be avoided, even if well veiled and smoker in good trim.

On these off days proceed something after this fashion: Stepping to the rear of the hive carefully blow a little smoke in at the entrance until the bees are heard to hum as they scamper away from the smoke. Now pry the cover up a little, very carefully, and as this is done gently send a stream of smoke into the crack made by the knife or hive tool. This drives down the the guards at the top to meet those which had run from the entrance, and so disconcerts them that the fighting properties are taken away, and their main thought is to take a sip of honey for fear their house is on fire, and that they will need some stores to start with anew, if they are obliged to seek a new home. The crack is now made a little wider, and more smoke is driven in when the cover is removed. If, after the cover is off, the bees seem to show quick, nervous movements, bobbing their bodies quickly one way and the other, with their heads following every motion you make, no matter how slow these motions are, then give a few more light whiffs of smoke until they are subdued and comparatively quiet, as the frames are gently pried apart or loosened preparatory to removing. If, at any time, the bees stick their heads up and follow your hands as you manipulate the frames or hive, thus showing that they are ready to fight, they must be driven back again with smoke or else a volley may pour out which will give many stings, if the operator is not stampeded entirely.

As the frames are removed they should be carefully set in an empty hive or light box carried along for this purpose, as all robbing is forestalled in this way far better than can be done when the frames are set down on the ground outside the hive. If the bees show that they are becoming obstreperous at any time, a few more puffs of smoke will quell them, and your necessary work will be done without stings or arousing the colony to a pitch that will be shown by their coming at you whenever you pass the hive for the next ten days.

Now I do not want to leave the impression that this much smoke and then slow movements are required on all colonies. This is for "off days," for colonies known to be vindictive, and more especially for a beginner when making his first efforts at handling bees. On bright days, when nectar is coming in, the usual procedure is to carefully raise the cover, blowing a little smoke in the crack when first made, when the cover is set beside the hive and the frames handled and the needed work done with any part of the hive, closing the same in less time than it has taken to tell how it is done. If there is anything that needs care, more than all else toward avoiding stings, it is that no bee be mangled and killed through our manipulation. Few, if any colonies, are so peaceable that they will not resent. to the stinging point, having their sisters rolled and mangled as the frames of comb are lifted out and returned to the hive, and having from one to a dozen of their fellow workers crushed and killed when the cover to the hive is put on, as many do without first driving the bees off the joints where more or less of the colony congregate while we are at work. I have often wished, when in apiaries where the joints between the covers and hives were "carpeted" with dead bees which had accumulated from those killed with each manipulation, that the operator was obliged to take a sting for every bee killed in this way, believing that such stings would show such a one that it would be more humane to take a little time to drive the bees from this death trap made for them every time a hive was closed.

Regarding bees stinging some people more than others, there is something in it; but what that something is, I have never been able to tell. I used all means I knew of some 30 years ago to get a man stung, punishing myself with stings beyond measure, but not a sting did he get. I was veiled perfectly. while he had no protection of any kind.

Again I hired another man to work in my garden 15 rods away from the nearest colony in the apiary, and at a time when the bees were not at all cross, when white clover was yielding nectar so that I could work all day in the bee-yard without a sting, and in less than 10 minutes this man was stung twice. I got out the stings and set him at work behind the barn, out of sight of the bee-yard and 20 rods away. Soon he came in the barn with three more stings, and said he could never work anywhere near bees, and quit me altogether.

The farmer on whose land is my outapiary will come from his work, at any and all times, with sleeves rolled up, and often wet with perspiration, sit right down on a hive next to the one I work on, with bare arms and face, and get a sting not more than twice in a season, while the bees are often so cross when an off day comes, and I am obliged to work rapidly, that they sting through my clothing. A few will hover about him, one or two get in his whiskers, which he will carefully pick out, look at them and then let them go; when I would be stung blind were I not fully veiled. The why of this I do not know.

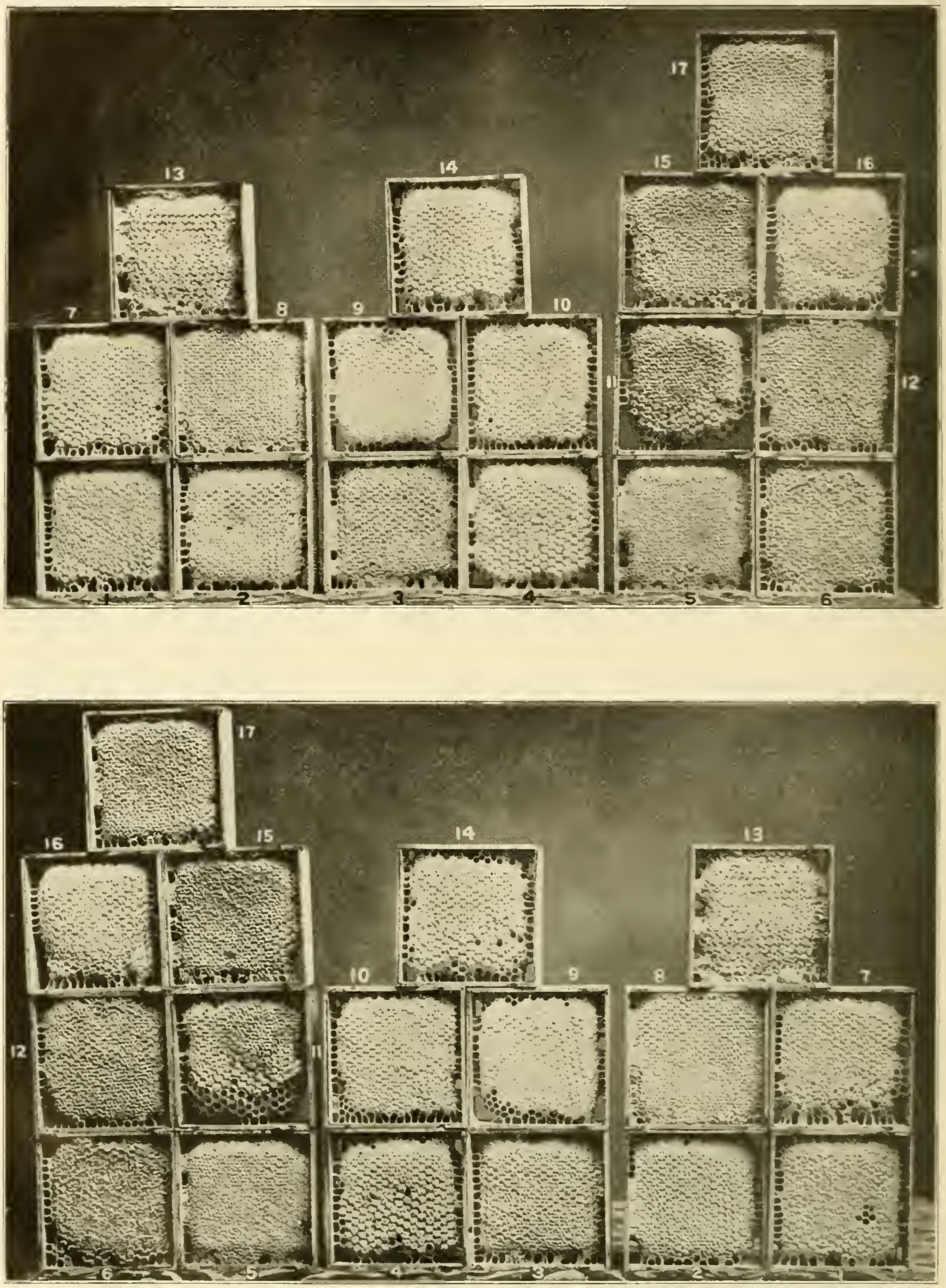
Borodino, N. Y.

Fastening Alexander Feeders

BY E. S. MILES.

I WONDER how many readers of the American Bee Journal use the Alexander feeders, and what methods are used to keep them attached to the hives? I have known extensive bee-keepers to use nails to attach them to the bottom-board or to the hive. A nail always makes a hole, and a *leak* sooner or later—a thing not desirable in a feeder. When I first began using these feeders, 7 or 8 years ago, I studied this matter, and hit upon the following device which has worked well with me, and I would like those who have no good way of attaching these feeders to make a few of these and give them a trial:

The device, as shown by the accompanying cut, is simply a piece of strong wire bent with a hook at one end long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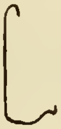
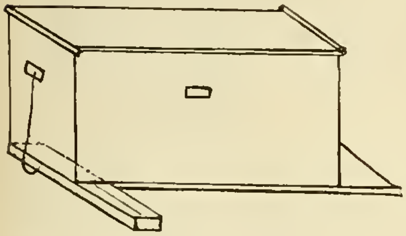
The photographs above represent the two faces of 17 sections which Mr. Rauchfuss has used in illustrating the points in his article on "Honey Grading." Article and explanatory table appear on opposite page.

enough to reach about the center of the feeder, and at the other end a short hook to hook into the hand-hold in the end of the hive. Any one can make them from old stiff wire with a pair of pliers. They should be tight enough to go on with a little spring pressure, and, if of the right shape, they hold the feeders without any damage to feeder or hive. I prefer old rusty wire such as was used for fences. It is a little stiffer, and not so inclined to slip as new galvanized wire. I do not remember the size of wire in numbers, but use about as large wire as can be bent with an ordinary pair of 8-inch pliers.





Manner of Fastening an Alexander Feeder With a Wire.

Another small annoyance was the entrance blocks commonly used, blowing or working loose so that one could not depend upon them being on tight enough to do any good. We hit upon the idea of putting a cement coated nail through them, using a nail long enough to reach through the blocks 1/8 to three-sixteenths of an inch. The cement coat keeps the nail tight in the blocks, and 1/8 to three-sixteenths shoved into the bottom-board holds it to its place securely, yet it is readily removed at any time. We use two nails to a block, one driven from each side so the blocks can be used either side up to vary the size of the entrance.

Dunlap, Iowa.

The New National Grading Rules

BY FRANK RAUCHFUSS.

AFTER a careful study of the new rules adopted at the Cincinnati convention in February, I cannot help thinking that these rules were not fully discussed before being adopted. Grading rules, designed for the use of all the bee-keepers of the United States, are of considerable importance. Plenty of time should be given to carefully go over the field to find out not only the needs of the bee-keepers in the main producing sections, but also the requirements of the principal markets.

We grade honey for the purpose of bringing our product before the ultimate distributor in such shape that it may be sold, without any further manipulation, at the best possible price. To accomplish this, we must see that the contents of each case are as nearly uniform in finish, color and weight as can be. The nearer we come to this, the better price the distributor can pay us. The variation in the selling value of the best and the poorest case permissible in any one grade should be as little as possible. Otherwise we only get a fair price for the poorer and a poor price for the better cases of that grade. Much on the same basis, the shipper of a car of mixed apples will only get at best a fair value of the poor stock in the car.

Grading rules should be explicit and as much as possible couched in language that will not permit of any misinterpretation on either side, buyer or seller. Now let us see how near the new National rules come to these ideals. The opening sentence is very good.

Extra Fancy.—This grade, as well as the grades termed Fancy and No. 1, do not permit anything but sections *free* from propolis, or other pronounced stain. How large, or rather how small, a proportion of the comb honey crop of the country is absolutely *free* from propolis stain? If this rule is strictly adhered to, there will be in some parts of the country but very little comb honey permitted to go into the first three grades. While most of this honey is a very good marketable article otherwise, the propolis stains on the wood cannot be removed entirely.

The two pictures that I submit herewith show both sides of 17 sections, numbered so the reader may follow my descriptions. In the extra fancy grade, not more than six unsealed cells on either side of a section are permitted. This eliminates much very fancy honey, because there may be part of a row of open cells, next to the wood.

No. of sections	Grade according to new Nat'l Rules	Finish	Attachment to wood	Col. of combs and cappings	Weight	No. of uncapped cells	Remarks.
1	Fancy	good	good	white	13½ oz.	6	except outside row.
2	Fancy	good	good	white	13 oz.	1	except outside row.
3	No. 1	good	good	slightly off	13 oz.	none	except outside row.
4	No. 1	fair	fairly good	white	12½ oz.	20	except outside row; mostly one side.
5	Standard	very good	very good	light amber	16½ oz.	none	completely capped except row 2 cells next to wood. Color of cappings reddish.
6	Standard	very good	very good	light amber	15 oz.	none	except outside row. Color of cappping reddish.
7	Fancy	good	good	white	12 oz.	8	except outside row.
8	Fancy	excellent	very good	white	16¼ oz.	12	these are next to the wood on top, and not much noticeable.
9	No. 1	fair	fairly good	white	12 oz.	30	except row next to wood.
10	No. 1	good	good	white	13 oz.	12	except row next to wood.
11	Standard	very poor	fair	light amber	11½ oz.	48	a very poor specimen, should not be anything but cull.
12	Standard	good	good	light amber	15½ oz.	none	except row next to wood. A good section in every way except yellow cappings.
13	Extra fancy	fairly good	good	white	15 oz.	none	completely capped clear to the wood, but otherwise much inferior to No. 8.
14	No. 1	fair	good	white	12 oz.	23	except row next to wood should not be called anything but No. 2 grade.
15	Standard	very good	very good	light amber	15 oz.	none	except row next to wood, cappings grayish tint.
16	Standard	fair	fair	white	12½ oz.	4	except row next wood should not go into this grade, as it is well enough attached at top and bottom to stand shipment.
17	Standard	very good	very good	light amber	13½ oz.	4	practically same as No. 16, except different color of cappings.

SECTION 8.—This is a very fancy section, but has 12 open cells on one side, on top, next to the wood. That it is practically perfect otherwise is evidenced by the weight, 16¼ ounces. On the other hand, Section 13 is what may be called an ordinary No. 1, but it must now be classed as extra fancy, because it is capped white, firmly attached and completely sealed. A critical buyer would readily accept the first-named section for extra fancy, although the rules say it is only fancy, but he would not accept Section 13 as extra fancy.

FANCY.—Permits six uncapped cells on either side, exclusive of the outside row. It is not stated where these six uncapped cells may be, and whether they may be empty or filled. Section 1 has just six uncapped cells, almost in the middle of the comb on one side. It seems that such a section should not be termed fancy. It is nothing but a No. 2.

No. 1.—Forty uncapped cells, exclusive of the outside row, are permitted here. It is presumed that these 40 cells may be anywhere on the face of a section, and may be filled or empty. If so, some honey that should not be classed otherwise than cull, is permitted in this grade. On the other hand, the requirements for color of comb and cappings are quite strict.

STANDARD.—In this grade we have as many as 60 uncapped cells, exclusive of the outside row. What has been said about uncapped cells in previous grades applies to this with still greater force. Section 11 shows 48 uncapped cells. It is but a poor cull. In contrast with this we have in the same grade sections 5, 6, 12, 15, 16, 17. Section 16 is fine and white, but goes into the lowest class because not firmly attached to sides. All the others are very nice, heavy weight sections, but the cappings are more than slightly off color, yet they should not be thrown into the same grade as Section 11.

Large portions of this country produce comb honey that may be termed more than slightly off color in cappings. It would have to be sold at the price of the lowest grade, even though it is fine, well finished stock.

I was astonished not to find grading rules for extracted honey. Are we not interested in this also?

I submit these criticisms in the hope that better rules may be drawn at some future time.

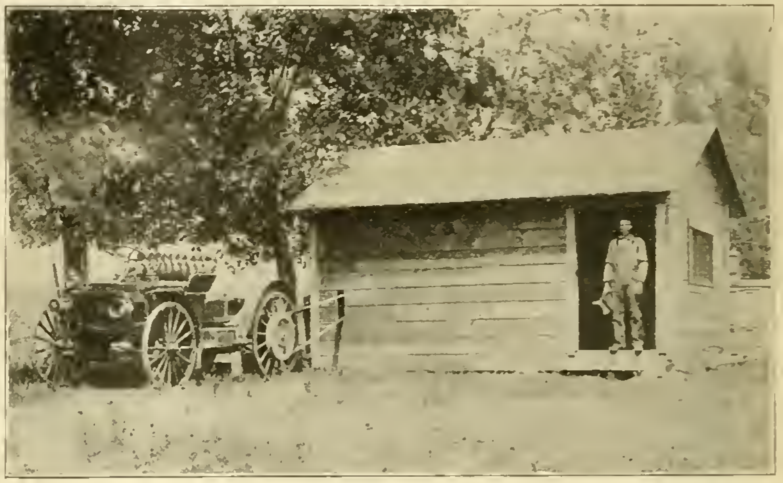
Denver, Colo.

Producing and Marketing Honey With the Automobile

BY A. H. BELL.

I AM SITUATED in the Musselshell Valley, which varies from nothing to a mile in width, and the main source of honey flow is alfalfa and sweet clover. I came into this valley three years ago.

Finding a suitable location, I next cast about for a good strain of bees free from disease. These I found near Billings, on the Yellowstone River. As it was only 60 miles by wagon road, and over 200 by the railroad, I decided to hire an automobile to haul them home. I hired a large touring car of 40-horse power, and into this loaded 25 hives, tiering them up five high, and nailing all securely together. They made two loads, as 50 is the number I started with. We were on the road just three hours with each load, and as far as I can remember, not a dozen bees in each hive were lost. This was in May, and all the precautions taken were the nailing of wire screen over the entrances.



NO. 1.—THE AUTOMOBILE USED TO RUN THE EXTRACTOR.

The narrowness of the valley makes it impracticable to have more than 100 colonies in one location, so I decided on out-apiaries, and established the first at Lavina, 18 miles west. One year I tried attending this yard by driving to it with a team, hauling supplies as I went, but as this took too much of my time, I got an automobile, and selected the International. This, I think, is an all-around car, as with a rear seat and top it makes a very acceptable pleasure car, and in a few minutes the deck is cleared for action, and I am ready to load 72 10-frame shallow supers, or 42 10-frame hives. With this load I can leave home at 7 a.m., and at 8:30 a.m. I am at Lavina, having passed over some of the worst roads and hills to be found anywhere.

NO. 2.—A. H. BELL UNCAPPING HONEY.

I run the Lavina yard for extracted honey, and last year took 7500 pounds from 75 colonies, fall count. I use a 12-shallow frame power extractor equipped with honey pump, and run the whole thing by a belt from a pulley on one of the rear wheels of my automobile, as shown in the photograph, it only being necessary to "jack up" the wheel used. The other may remain on the ground.

The photograph, No. 1, shows the honey house, and automobile hitched to the extractor at my Lavina yard. No. 2 shows the inside of the same building, with myself uncapping into a large melter of my own make. I also make all of the hives, supers and frames I use. No. 3 shows the Lavina yard, while No. 4 is the home yard, which I run for comb honey. Owing to a shortage of sections this year, I got only 94 cases of comb and about 4000 pounds of extracted there. This yard also contains 75 colonies. No. 5 shows a load of 72 10-frame supers just taken from my work-shop and factory at Elso. This I also built. The sheet-iron building at the left is used as a store-house.

Almost all of my honey is sold locally and in Roundup, where I make weekly trips with the automobile, and go from house to house. If I had to give up the automobile, I would give up the bees, too.

Elso, Mont.

Words and Their Meanings

BY G. W. BULLAMORE, F. R. M. S.

WHEN the sulphuring system was in vogue the bee-keeper divided his colonies into two classes, the stocks and the swarms. A stock was a colony or "stall" that had given off one or more swarms,

No. 3.—The Lavina Yard of Mr. Bell, Run for Extracted Honey.

the significance of the word being that of a main stem or parent. A swarm retained its name until the following spring, when, by giving off a swarm, it became a stock. The advantage of this system of names was that it conveyed some notion of the condition of the combs with regard to breeding and pollen—a matter of great importance when all honey was obtained from the brood-nest, and when the condition of a hive was judged by its weight.

With the growth of the bar-frame system of bee-keeping, the practice of supering and methods of artificial increase, the necessity of distinguishing the stock from the swarm is no longer of moment, and we find that the word "stock" is gradually changing its meaning, and is now applied to a well-established colony irrespective of other details.

The change of meaning is not unusual in the history of words. We have other examples in the words "ruskie" and "pot." These are both dialect words meaning a straw bee-skep. The "ruskie" was a cylinder of bark used as a bee-hive, and it is easy to understand how the meaning of the word has altered. The word "pot" is not so easily explained. But pottery was made in England before the potter's wheel was known, and probably large boiling pots, and also bee-hives, were made by plastering clay over a wicker foundation. So the word may be a survival of the time when the bee-hive was really a pot.

D. M. Macdonald, in the British Bee Journal for Nov. 21, 1912, discusses the meanings of the words hive, colony, stock, and swarm. He would define swarm as meaning bees only. Colony includes bees, combs, honey, pollen, brood and eggs. A stock is a colony plus the hive, and a hive is merely the receptacle or bees' house. Perhaps some bee-keepers may feel inclined to adopt these definitions, but to do so will not make for clearness. "I noticed a row of stocks in the garden" is more likely to mislead than "I noticed a row of hives in the garden." "If "stocks of bees" should be used, its advantage over "hives of bees" is not so obvious, and as a precision, I might object that perhaps some of them were swarms. And it would be quite wrong to accept these definitions and then to speak of a colony killing off the drones.

Some day, perhaps, stock, swarm and colony will crystallize into distinct and clear-cut meanings, but we should never forget that the dictionary is founded on language, and not language on the dictionary. If we consult the best writers on bees, we shall find that the exact meaning of these words is governed largely by the context, and may include much or little besides the bees. Just as we may sometimes use the word "man" to include both him and his overcoat.

Albury, Herts, England.

[The above is surely interesting to the man who wants to understand others or be understood. But we find in it proof of the divergence between modern "American" and "English." Many of our people think that they speak English "better than the English." But they speak it differently, and the divergence is growing. An American cannot go to England and pass for an Englishman any more than a Britisher can come to the States and be regarded as a native. When in London some years ago, the writer discussed the price of an article with a shop-keeper, who told him: "You would have to pay more for this in your country." Being French born, and just arrived from a visit to France, the writer thought that he must look "Frenchy" enough to be detected, and said: "My country? Where is it?" The reply was prompt, "You are an American."

Similar remarks may be made regarding our use of hyphens or compound words, but on this subject, we refer the reader to the witty tilts exchanged between Dr. Miller and the esteemed editor of the Irish Beekeepers' Gazette, in another column.

"Stock" and "colony" were used indifferently by Langstroth, Quinby and others, some 50 years ago, to denominate a hive of bees, with combs, etc. Langstroth, in his index says:

No. 4.—Home Yard and Factory of A. H. Bell, at Elso, Mont.

30 MILLION SECTIONS AND 100000 HIVES IS THE ANNUAL OUTPUT OF THE LEWIS FACTORY Send for Annual Catalog which will tell you who is your nearest Distributer. G. B. Lewis Company, Watertown, Wis.

"Stocks, see colonies." Now none of the American writers use the word "stock" in that sense. Neither in the Century Dictionary, nor in Webster's International, can it be found as meaning "a hive of bees," although the Century gives some 39 definitions of the word "stock." To the Americans, the word "stock," when speaking of bees, means "race, lineage," as "my stock of Italian bees," "the stock of bees which I am breeding." "Colony" means the entire hive of bees. "Swarm" means the bees, without combs or hive. A swarm is a "swarm" until it has accepted the hive in which it has been put and has commenced to build comb and to breed, when it becomes a "colony." Yet it would not always be easy to say just when a swarm ceases to be a swarm and becomes a colony.

Mr. Bullamore's mention of "ruskie" shows the alliance of the languages of Europe. Ruskie and the modern French "ruche" have the same origin. The French Larousse dictionary gives the etymology of "ruche" as from "rusk," a bark receptacle. "Rusque" is still used in Languedoc to mean a bee-hive.—Editor.]

No. 5.—Ready to Start for the Out-Yard.

Soft Sugar—Something About Its Use as Bee-Food

BY ARTHUR C. MILLER.

OH, SUGAR! When Noah went into the Ark, he is reported to have taken a pair of each kind of animals with him, but I suspect he had to take *three* bees, a queen, a drone and a worker, and also sugar to feed them. Surely he used sugar for the purpose. He couldn't have kept honey good during that damp spell.

Some little while ago, back in Noah's time or later, I wrote an article on the use of "soft sugar" for feeding bees, and sent it to some magazine, and the careless editor let it get into print, and since then I have been more or less busy trying to make other persons understand what I meant.

"Soft sugar" is sugar that is not hard. I guess that is plain. Hard sugar is, well, *most* everybody knows what that is. I can well remember how hard it was, in my bed, when it crumbled off the top of the sugar cookies surreptitiously eaten under the bed clothes. That was bee food, too, for I was reputed *then* a very busy little bee—so far as getting into mischief was concerned.

But the bee food that concerns us now is quite different, and needs to be formally introduced. From the juice of the sugar cane and sugar beets there are produced by cooking, sundry syrups (molasses) and sugars. The sugars are divided by the refiners into 15 different grades, with the granulated sugars at one end and the moist brown sugars at the other. In between is a grade known as "Empire A," a soft, moist, cream-colored sugar, very pleasant to the taste, and sold under various names, as "A," "Coffee A," and "Coffee." There are several other creamy sugars which are sometimes given when "A" is called for, and though resembling it in color, work quite differently when used as bee food. Well, now we are talking about the grade "Empire A." Don't forget that, and don't later use something different and condemn the system for the failures due to yourself.

This sugar is given to the bees just as you buy it, *without* the addition of any water or any honey. It is put into division-board feeders and hung in the brood-chamber, and the bees lick away at it until it is all gone. That is simple, isn't it? Quite, but don't expect a measly little, petered out bunch of bees to chase to the other side of a cold brood-chamber when they are cross and sleepy, to warm up the food for the babies, for they won't do it. And I wouldn't either. So put the sugar feeder smack up against the cluster, and this applies as well to one colony as another. In hot, humid weather of summer, when the bees are spreading out all over creation, it doesn't matter much where you place the feeder, so long as it is in the same hive; but in the spring time, when you are most likely to use this plan to prevent starvation or to keep up brood-rearing, see that the feeder is close up to the brood.

That is about as far as the originator of the plan went in its use. Sho.! No, I didn't originate it. I'll tell you about who did later.

Well, being possessed of an everlasting faculty for experimenting, I one day tried a little feeder of this sugar in one of the baby nuclei I use for queen-mating, and have used nothing else since. A pound of the soft sugar will keep one of the little colonies going for the whole season. Rather disturbs the complacency of those who like to trot around every evening with a teapot pouring syrup into feeders. Thank you, not for me. I prefer to swing in the hammock, with some fair friend, whispering little nothings and swatting mosquitoes.

One summer's day there strolled into my yard a little fellow standing some six feet six in his stockings, built all over to match, except his heart, and that is far bigger. He is a New England Yankee, born among the green hills of Vermont, trained by experience in several States, polished off by a period in the State of Wooden Nutmegs, finally settling comfortably down in New Hampshire, where he has quietly proceeded to out-yankee the natives. On that summer day he took a great shine to those sugar feeders, particularly to the sugar—I think it took me almost all of the next day to refill them—and asked a few score questions. The next thing I heard from him was that he had been *wintering* bees in cold New Hampshire on soft sugar only. Oh, yes! *he* did it all right, but don't be so all-fired sure that *you* can. I certainly am not rash enough to advocate it for others to use for such purpose until from experience I know more about it.

For some conditions combs of honey make the best food, for other conditions, syrup, for others, candy, and for a whole lot the soft sugar cannot be excelled.

The foregoing was caused by that Byer fellow saying things about a merry-go-round 'twixt the sugar, Editor Root, and myself (American Bee Journal, page 17). At present we are feeling quite stuck up, thank you.

The soft-sugar feeding was given to the bee-keepers by Samuel Simmins, of Heathfield, Sussex, England, long years before Byer got mixed up with bees—I don't know but what it was before he was born; so just naturally he knows nothing about it. Mr. Simmins wrote a book telling about this and a lot of other interesting things—not all of them feasible in our commercial bee-keeping—and that book should be in the Agricultural Department at

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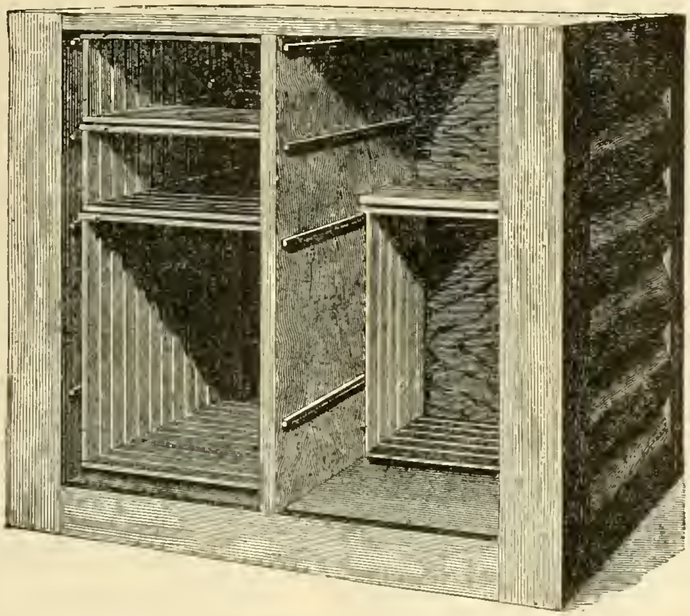

The Burki Jecker Hive Used in German-Switzerland.

Guelph, Ont., if it isn't there already.

Mr. Simmins found the soft sugar in the English markets. It is in the United States markets, and if Mr. Byer rustles around I reckon he will find it in the Canadian markets.

Now I will go and wash the stickiness from my fingers and leave you to dabble in the sugar by yourselves.

Providence, R. I.

Swiss Bees and Bee-Keepers

BY DR. BRUNNICH

DIFFERENT KINDS OF BEE-KEEPING.

We may distinguish here three kinds of bee-keeping: 1. The bee-culture of our *French* speaking contrymen. They have in general the large Dadant hive, similar to the American style of hives. Their chief honey sources are the woods with the fir "abies pectinata," which yield a great amount of honey-dew. Their bees consist chiefly of hybrids. The endeavors at queen-rearing are not marked. The honey is, as a rule, of dark color and slight aroma, but the quantity is considerable.

2. The bee-culture of German Switzerland. Almost all of our bee-keepers have the Swiss hive. which opens at the rear. The combs are parallel with the entrance, the brood-chamber has frames 11 inches wide and 14½ inches high. Its capacity is about 2 cubic feet. We have 2 honey-chambers with frames ⅓ to ½ the height of the brood-combs. The entire hive is, therefore, from 3 to 4 cubic feet. Our best honey sources are dandelion and sage. In Rheinau, I got my honey almost exclusively from the sage; less important are fruit trees, sainfoin and other plants. In the Alps there are other flowers, but there also the dandelion is the most important. Sometimes we have a second crop in July from the woods, and from bear's brush "heracleum." White clover is not abundant here. We use no excluders, a good queen not going into the supers. Our favorite is the black or German bee. Our methods of queen-rearing are from the German.

3. The bee-culture of Italian Switzerland, Tessin, is carried on in part by German methods, and in part by the old method of boxes or trunks without frames. In autumn the heaviest and lightest colonies are brimstoned, and thus the harvest is made.

THE BLACK, ITALIAN AND CARNIOLAN BEES.

I have an extensive experience in this matter, and oppose the views of Mr. A. Getaz. In the beginning I owned some hybrids, part of them being almost pure Italians. These colonies always had much brood, without being stronger than the black. Even in October they had a great amount of brood, and as a beginner, I was very proud of them. But in spring the blacks were very much stronger. I have since that time made the same observations, not in my apiary, but in the apiaries of neighbors and friends. I also had lately a colony given to me by a friend in Bellinzona Tessin, in a large plain box. He told me that it was the best stock of bees he knew. I transferred it into movable frames. It was an excellent colony, keeping up its breeding until autumn. The colony was exceedingly strong in summer, but in spring it was always weak. Its results were considerably less than those of my best black bees.

With the blacks as with the Italians, the purer the stock, color, hairs, etc., the better the results. There are of course inferior bees in all races. It is for the breeder to select the best to breed from. The Carniolans stand much nearer the blacks than the Italians, and they are soon difficult to distinguish from them. It is probably the same race which has been influenced by climate, flora, etc., of the land.

THE INFLUENCE OF THE DRONES ON THE RACE.

Though I think the drones play an important part in the heredity, I believe that Mr. Getaz overestimates them, in considering their influence as above that of the queen. How could we otherwise be able to explain the well-known fact that a good colony conserves its characterists for 10 years or more, though there be in the vicinity colonies of quite another type? Truly, we know nothing at all about the heredity in bees. It was for this reason that I secured the Italian colony above mentioned. Doubtless Mendelism plays an important role, but the experiments are difficult and intricate, and it will be years before we get a result. The influence of the drones is probably as great as that of the queens. I have observed that all advanced bee-keepers endeavor to breed as many drones as possible from the best stock. On the other hand, we believe that it is necessary to have a certain number of drones in each colony, or the impulse of working is less. For these reasons we do not see why

MATING STATIONS

would not be as useful in America as in Switzerland. You must have some Italians that do not entirely satisfy you, and every up-to-date bee-keeper would wish to mate good queens with good drones.

THE SWARMING IMPULSE

we consider as far more dependent upon the race than upon the external circumstances, though I will not deny that the latter have a certain significance. However, we have bees which cannot be made to swarm under any circumstance. On the other hand, it is well known that it is often impossible to hinder some active colonies from swarming. I have colonies which have not swarmed for 10 years, and when the queen is 3 or 4 years old she is superseded without trouble. As a rule, the old queen lives in the hive with the young one from a few days up to 11 months, as I once observed in a colony of my best "Sigrun" stock.

Zug, Switzerland.

Too Much Parcel Post.—Too much parcel post is the reason Postmaster Hursh, of Branchville, N. J., gave for resigning. "Shipments of bugs and bees have made life miserable," he wrote to former Postmaster Gen. Hitchcock.—*Exchange.*

◆

Tip-Top Sections.—Remember, great warmth around the hive, a contracted brood chamber occupied by an active queen, and a real flow of nectar, result in tip-top sections.—G. S. Oettel, in South African *Poultry Magazine.*

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DR. MILLER'S ANSWERS~

Send Questions either to the office of the American Bee Journal or direct to
DR. C. C. MILLER, MARENGO, ILL.
He does NOT answer bee-keeping questions by mail.

Abolishing the Careless Bee-Keeper

There is no doubt we owe to the careless and ignorant bee-keepers in all countries much of the evils the rest of us have to contend against in bee-culture, especially in the propagation and spreading of disease. We, in New Zealand, know this only too well, and as one who has taken a leading part in getting rid of most of them in this country, and know the good results, I was more than astonished at the reasoning of Dr. C. C. Miller, page 311, October issue, when he says: "The foul brood *disease*, left to itself, is sure to drive the careless bee-keeper out of the business; the foul brood law is the only thing to keep him in business."

When I saw this I concluded the printer must have gotten things mixed, and reversed what the Doctor had said, but seeing no correction since, I now conclude it was no fault of the printer. Twenty-five years' experience with the careless bee-keeper, who never got beyond the box-hive and sulphur pit, has about convinced me that it is exactly the other way with us, the careless bee-keeper nearly drove all our commercial bee-keepers out of the business by spreading disease faster than it could be dealt with. The result of our legislation has been to drive the former out, and the latter is now flourishing, while disease is under control, and fast being eliminated.

NEW ZEALAND.

ANSWER.—I don't believe there is a particle of difference in our views, Bro. Hopkins. A good foul-brood law, according to your view, will drive the careless bee-keeper out of business. To be sure it will. It will do one of two things: it will help him to clean out the disease and become a careful bee-keeper, in which case there is no longer a careless bee-keeper in business; or else it will destroy his diseased colonies, and thus put him out of business. I think your view is all right.

Now see if you don't agree entirely with my view. I believe that foul brood, *if left to itself*, as I said, will drive the careless bee-keeper out of business. You say that the rapid spread of the disease nearly drove commercial bee-keepers out of business. If that be true with men intelligently fighting the disease, would it not be emphatically true of those doing nothing against it? In other words, is it not merely a question of time when the disease, if left to itself, would kill out all the bees of the careless bee-keeper?

I think this is what we both agree upon: a good law will make the careless bee-keeper careful *or* it will put him out of business; left to itself the disease will put him out of business without any "or" in the case.

Carniolan or Italian?

Which are the better, Carniolan or Italian bees, and which kind of Italians? If all that is said about the Carniolan bees is true, then they should have the preference with everybody. I am a beginner. QUEBEC.

ANSWER.—Bee-keepers are by no means a unit in their preferences. It is quite possible that what is best for one may not always be best for another. The great majority however, prefer Italians; so the safe thing for a beginner is to adopt that kind, preferably the leather-colored kind.

What Determines the Sex?

Some years ago it was generally recognized that eggs of a mated queen would hatch either drones, queens or workers, depending upon the food given to the larva, that an egg from a drone-cell could be removed and placed in a worker-cell would hatch a worker or a queen, depending upon the food; that fertile worker eggs would only hatch drones.

Now, according to latest authority an unmated queen's eggs hatch drones, and when mated some eggs produce males and others females. Are we to consider the earlier deduction correct, or are we to infer that the laws of Nature that change the sex in fowls should rule? ONTARIO.

ANSWER.—Something less than a century ago, Dzierzon gave out the theory that a fecundated queen lays two kinds of eggs, fertilized and unfertilized. From an unfertilized egg can come nothing but a drone, no matter in what cell the egg is placed, nor what kind of food the larva receives. A fertilized egg may produce either a worker or a queen. If it is to be a worker, it will be fed with a certain rich food for three days and then weaned; that is, it will be fed a coaser food during the rest of its larval existence. If not weaned, but the rich food continued, and a larger cell allowed, then it will be a queen. The Dzierzon theory was at first combated, but afterward accepted as the true theory.

A few years ago E. Dickel advanced the theory that all eggs were fertilized, and that the workers had the power to determine the sex. But the Dzierzon theory is the one generally accepted by intelligent bee-keepers of the present time. So you see fowls and bees are different, for the unfertilized egg of a fowl never hatches, while the unfertilized egg of a bee hatches, and always into a male.

Increase

What is the best way to double any number of colonies? NEBRASKA.

ANSWER.—Something depends upon circumstances what is the best way. If you have had very little experience it is possible that it may be best for you to depend upon natural swarming, but allowing no after-swarms. When a colony swarms, set the swarm on the old stand and set the old hive close beside the new one. Then a week later move the old one to a new place 10 feet or more distant. That will prevent after-swarms, and the swarms will give you surplus if there is any surplus.

If you prefer not to have natural swarming the Alexander plan of increase may suit you. A little before it is time for bees to swarm in your neighborhood, lift out of the hive all but one frame and put them in an empty hive-body. Leave the queen with the one frame of brood, and destroy any queen-cells that may be on that frame. Fill out both hives with frames filled with foundation, or with starters or drawn comb. Put a queen-excluder over the hive containing the queen and one brood-frame, and set the other hive on top of this. Five days later look for queen-cells in the upper stories. If you find queen-cells in an upper story, let it stand another five days, and then set it on its new stand, giving it a queen-cell from one of the others. It will hurry up matters if you can give a laying queen to each.

Spring Dwindling—Robbing Dead Colonies

1. Why do some colonies having plenty of stores and a fairly good number of bees start brood-rearing in the later part of winter and get a good deal of capped brood and brood in all stages, and when cold weather comes the whole outfit dies? This has happened with me two seasons.

2. How can I avoid this thing?

3. How early in the season is it advisable to put out artificial pollen?

4. How would it do to leave the hives with honey and all they contain where they stand, where the colonies have died, and let the bees rob them out? NEBRASKA.

ANSWERS.—1. This seems to be a case of what is called spring dwindling. The cause is somewhat in doubt. It looks a little as if the bees were old, had more brood started than they could take care of, then died off with the strain of trying to provide digested food for the brood, sometimes swarming out with plenty of food and brood in the hive.

2. I don't know, unless it be to have colonies strong with bees not too old the preceding fall, and I don't know how much good that will do.

3. As early as the bees will work on it, or as early as the bees fly freely. There is not the same danger from giving it early as there is from giving sweets early.

4. It will be all right if there are no weak colonies that might be robbed when the bees get stirred up. It may be as well to set any such hives some rods away. But after the bees have begun robbing out such an undefended hive, be sure not to take it away until there is no longer anything in it for the robbers to get. If you do, it will be pretty certain to make the robbers start on some adjacent hive. You may, however, take away nearly all the contents of the hive if you still leave the hive in its place for the robbers to fool with.

How to Double and Still Get a Crop

1. I have 30 colonies and wish to double them this summer, and also wish to get a honey crop. In the past I have had trouble in wintering, because I did not have my bees strong enough on account of having made increase after the clover and basswood flows. I would like your opinion on the following plan: Run 20 colonies for honey, and about June 15 break up the other 10 into about 40, leaving one frame of brood and the queen on the old stand, and giving ripe cells to the 30 divisions. By the time the flow is over these queens ought to be laying. After the flow, and the honey is off, raise the brood-body over an excluder with the queen and one frame of brood below with empty combs. At this time take all the sealed brood and give it to the divisions. As fast as the brood over the excluders is sealed, give it to the divisions.

2. What do you think of using the straight Alexander plan after the clover and basswood flows? OHIO.

ANSWERS.—1. It may work well; it may be a failure. You see you cannot count on any

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plan without taking into account that very important item, the season. In a very good season, especially with a good, late flow, results would be very different from results in a year with so meager a flow as to supply the bees only enough for their daily needs. In brief, your plan is to have 20 colonies devote themselves entirely to storing without swarming, and then at the close of the clover and basswood to furnish brood for 30 or 40 nuclei. In the first place, it's dollars to doughnuts that those 20 colonies will not go through the harvest without swarming. By the time the flow is over there will be a let-up in brood-rearing, and if you find as much as five brood in each hive you will do well. That would bring your nuclei up to something like three brood each. If a good flow continues late from fall flowers, each one may become a full colony with plenty of stores. Feeding might be resorted to, but somehow bees don't breed up as well with your feeding as they do when they can help themselves in the fields. So you see it depends greatly upon the season.

2. It should work all right.

Plans of Increase

I am struck by the item in the American Bee Journal, December, 1912, page 376, under the heading, "Making Increase." Why would not this do in place of shook swarming, when one did not mind increase? I did something like this in 1912, and it was as follows: In the case of a 10-frame hive I took away (*a*) five frames, some of which had queen-cells, and put these on a near stand, *i. e.*, the colony without queen, and left the "parent" colony (*b*) on the old stand. I filled up both with frames with foundation. I took 42 sections from (*b*) the parent colony with the original queen. The other colony with the queen-cells did nothing except to fill up the brood-chamber; things always looked very quiet about (*a*), and when uniting this colony with another, it was found with a queen.

On pages 310 and 311, October, 1912, issue, you answered my question about nuclei. Could a person, in our latitude, have queens ready from nuclei to use with such a method of increase as per page 376? You will notice I left the parent colony on the old stand, while the New York man, page 376, put the original queen on two frames on a new stand. PENNSYLVANIA.

ANSWER.—Your letters always interest me. First, because they show intelligent thinking, and second because they have the interest of puzzles. You're a very rapid penman, so rapid that some of your words are nearly a straight, horizontal line made a little wavy. No doubt you can easily read them when first written, but by the time they get this far from home, in zero weather, they make quite a puzzle. I'm conceited enough to think that in most cases I've made the right guess; but I feel sorry for the printer.

If I've interpreted you correctly, I think you are a little in error as to New York's plan. You seem to think that he puts the old queen on a new stand, whereas he intends "to increase by taking a frame or two from the old hive with old queen, and place the same in a new hive on the old stand." Later he says the old hive on the new stand will be queenless. So he leaves the old queen on the old stand, just as I understand you do.

In the shake-swarm plan all, or nearly all, the brood is taken from the old stand, and all, or nearly all, the bees are left on the old stand. New York's plan varies from the shake-swarm plan in that he takes away from the old stand nearly all the younger bees. Yours varies in that you leave half the brood on the old stand. Which plan is better to use depends upon circumstances. Your plan is perhaps the best of the three *if* you can be sure the bees will not swarm later on. But in too many cases I think the colony will swarm a little later with so many combs of brood left with the old queen. New York's plan will leave the two colonies somewhat equal in strength, and in case there is a heavy late flow he may get a good surplus from each. But in an ordinary season with surplus only from the early flow, New York may get no surplus from either, while a shake-swarm might have a good surplus.

You should be able to rear queens early enough for these plans, although you will have none too much time for it.

European Foul Brood in Honey and Super Combs

1. Would combs that have never contained brood be affected in any way, even if they had been drawn out by colonies affected with European foul brood? Would it be safe to use any of those combs? Now I have 200 self-spacing shallow extracting frames all drawn-out combs. They have been exposed to the diseased colonies, but not used for brood-rearing. The diseased colonies had stored honey in them, and I extracted it. Would it be all right to use them, or would it be better to make wax out of them? Everybody's bees are affected around here, as one of the bee-keepers left his hives out to be cleaned up where bees had died.

2. Is the honey stored by colonies affected with European foul brood diseased, or in what way is the disease carried? MICHIGAN.

ANSWERS.—1. I have used such combs without bad results. Whether it would always work so well I cannot say. If I had never had the disease I should not want to use them. But in your case, with the disease all around you, and having already been in your apiary, I should not hesitate to use them. The likelihood is that it will be some time before you are entirely rid of European foul brood, but it will gradually become less troublesome, and will not hinder you from getting crops of honey.

2. I don't know. I *think* surplus honey stored by diseased colonies is free from the disease, although there may be exceptions. At any rate, I fed such honey in a number of cases without finding any bad results. I should not feel so safe about honey in the brood-chamber.

Glass for Super-Covers

I have noticed two or three times in the Bee Journal, bee-keepers using a sheet of glass for a super cover. I would like to adopt it myself if it would be advisable, but before deciding would like to have your opinion for and against its use.

I now have 8 colonies in the back-yard (live in town), 4 in divisible brood-chamber hives, and 4 in different styles of hives that they were bought in. I expect to use the divisible hive altogether. Two colonies, last season, yielded 80 pounds, and were increased to 5. PENNSYLVANIA.

ANSWER.—Some have reported success in using glass over the brood-chamber, especially in England, while others object to it. I'm not sure what the objection is, but suppose there would be trouble with vapor condensing on the glass and dropping down upon the bees. The advantage is that you can see through the glass, yet there is not so very much to be seen without lifting out anything. You will probably be wise not to try it on a very large scale at first.

Making Increase—Robbers

1. I have a few colonies of black bees, and I wish to requeen them with Italian queens. I have two colonies of select tested Italians from which I want to save queens to do this, and I do not want to interfere with their swarming. Must I cut out the queen-cells I wish to use in nuclei before they swarm or after?

2. Do you think it is best to put queens in nuclei until they become fertilized, or put on cell-protectors in parent colony and introduce as virgin queens?

3. Last summer I cut a bee-tree and secured a fine swarm of Italians, with a fine looking queen. I put it in an 8-frame hive, and in a few weeks I examined it and it had six frames of capped brood, and the other two frames very nearly full. In a few days I noticed the bees dragging out their young, and every morning the ground would be covered with young bees not quite large enough to fly. I opened the hive and found they were tearing the combs to pieces and had nearly all the brood out of the combs; the queen was still in the hive and seemed to be in good condition. In a few weeks more I opened the hive again and found only a handful of bees—queen and bees had disappeared. They were within a few feet of the kitchen door, and I do not think they coul have left without some of us hearing them. Can you tell me what was the matter?

4. Do you think it will be safe for me to use these frames of comb in another colony this spring? MISSOURI.

ANSWERS.—1. When the colony swarms the cells will be entirely too immature to use, as the swarm generally issues at about the time the first cell is sealed, and it is best to cut the cells as mature as possible, say a day or so before time for the virgins to emerge. When the swarm issues, hive it on a new stand, and do nothing more to weaken the mother colony. Then the bees will be pretty sure to make preparations for after-swarming. You can make more sure of this if you return part of the bees, instead of leaving the whole swarm with the old queen. In six or seven days after the prime swarm, put your ear against the side of the old hive each evening, until you hear the piping of the young queens. This will likely be about the eighth day. When you hear it, go to the hive the next morning and cut out *all* cells, for the piping queen is already out of the cell. Look sharp as you cut out the cells, or some of the virgins will emerge before you know it.

2. Better leave them in nuclei until they are laying.

3. I don't know. The only way I can account for the combs being torn is that robbers did it. They might also drag out the young bees, leaving the queen, at least for a time. Yet it seems very strange that a colony strong enough to have six brood combs should have been overcome by robbers. Perhaps they were starving.

4. If my guess is right that the combs were torn up by robbers, then it will be safe to use them again.

Balling Queens—Spacing Frames for Winter

1. Will bees ball or kill their queen when they are drummed from a box-hive in transferring?

2. With a regular brood-chamber and a winter case made of ⅞-inch lumber, is 1½ inches on sides and ends and 8 inches on top, enough for safe wintering? NEW YORK.

1. I never heard of a case of the kind; although it would be nothing surprising if it should occasionally happen. Bees some

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times ball a queen when they are disturbed, but if left quietly alone they generally release her. Some have thought that the bees ball her to protect her.

2. Likely it will answer, although a greater space between walls is generally used; say 2 or 3 inches. But doubling the space between walls will by no means double the protection.

Requeening

1. I am thinking of trying the following plan this season: I will find and destroy the old inferior queen and introduce a sealed cell in a cell-protector) at the same time I remove the old queen. Can this be done safely? Or had I better wait about placing the cell until two or three days after removing the old queen?

2. If I wait until the colony has cells of its own started, is there not danger that the first queen hatched will swarm in the same manner as an after-swarm, and make me a lot of trouble in that line? INDIANA.

ANSWERS.—1. Very likely your plan will succeed. Waiting two or three days would make the bees more willing to accept a cell, but in a West cell-protector the cell ought to be safe anyhow. The cell ought to be well advanced. Then if it does not hatch out all right, it will pay to have on hand other cells so that you can destroy all "wild" cells those that the bees start on their own brood), and give another cell of good stock.

2. Yes, if there is a good flow of honey, killing the queen will almost certainly result in a "singer-swarm:" that is, a first swarm with a virgin queen.

Use of Extractors

1. I read in the Journal that when clover starts to bloom to transfer all the brood-frames except one to the super, leaving the queen below and placing an excluder between. Do you think it would have any effect on swarming or the honey harvest?

2. We seldom see pollen in the extracting frames. Do you think changing the frames would cause it to be brought up more than it should be?

3. Do you think it a good plan to put oil-cloth around the hives, leaving an air-space between hive and cloth during hot weather?

4. How many colonies would you think best to keep in a country where they raise mostly corn, having little or no pasture land?

5. Do you use starters or full sheets of foundation in your sections?

6. Do you use **T** tins in all your section supers?

7. Does Mr Dadant use excluders? If not, do the queens use the supers?

8. Sometimes we find the brood-frames empty, all having gone up into the supers. We thought it might be ants, but we fight them, and there are only a few left. Would it help to put oil-cloth over the brood-frames, as I just don't like to use excluders? IOWA.

ANSWERS.—1. It would have a great deal to do with swarming. With many bee-keepers, swarming is entirely prevented by putting all but one frame of brood above the excluder just before time for swarming. The colony being thus left undivided does fine work harvesting. But some have reported the plan a failure.

2. Likely more pollen would be carried up for a week or so, but after that the bees would empty out instead of carrying up.

3. Some protect the supers in this way to prevent the bees from deserting them during cool nights, but it is doubtful if it would be a good thing for the hives.

4. I don't know. That's one of the very hard things to find out. I don't even know what is the best number for my own apiary after having been on the same spot for 50 years. At a guess I should say that 50 colonies might be enough for the place you mention.

5. Full, very full. In a 4¼ section I use a top-starter 3¼ inches deep, and a bottom-starter ⅝-inch deep.

6. Yes.

7. Excluders are not needed, because shallow extracting-frames are used.

8. This happens only when the bees have been crowded for room below and have found the supers empty. Then the queen takes up her abode above, and the entire colony moves to the super. To avoid this, you should not give a super to the bees when there is no honey crop. Such an occurrence is very rare anyhow.

Newspaper Plan for Uniting Swarms

1. How do you work the newspaper plan for uniting two swarms?

2. I have never seen it tried, but I presume one of the queens would have to be destroyed. What would be the proper way to manage it?

3. Would you approve of the plan of using two brood-chambers, one on top of the other, to enlarge the brood-nest with 8-frame dovetailed hives? I do not wish to keep more than 6 or 8 colonies, but I would like to keep them strong. NEBRASKA.

ANSWERS.—1. It is a very simple matter. Take a sheet of common newspaper, spread it over the top-bars of the one hive. Of course the bottom-board will be under the lower hive, and the cover over the upper hive. There will be no sort of entrance or opening into the upper hive, and no bee can get out of it until the bees gnaw a hole through the paper. Within a day or so they will gnaw a hole in the paper big enough for a single bee to pass at a time, and the bees will pass through and mingle so slowly and quietly that there will be no quarreling, gradually tearing away more and more of the paper. In a few days or a week you can put all the frames of brood in one story.

2. If there is any choice of queens, kill the poorer, otherwise the bees will take care of that matter themselves. It is better if the lower hive remain on its old stand.

3. Decidedly. It often happens that before the clover harvest is over, a good queen will be hampered in a single 8-frame hive, and then it's a good thing to add the second story. But if you are working for comb honey, you should reduce to one story at the time of putting on supers. That can hardly be said to be reducing the room of the colony—merely giving the room in the super in place of the brood-chamber.

Double and Single Walled Hives

I am going to begin bee keeping this spring, and as I desire to start right, I want to ask you for an opinion.

1. Do the double-walled hives produce more honey than the single walled?

2. Are bees wintered out-of-doors better in the former hive than in the latter? PENNSYLVANIA.

ANSWERS.—1. No; and in general it may be said that differences in hives are more for the convenience of the bee-keeper than for the bees. Looking at it in another way, however, if two hives stand side by side, one with double walls and the other with very thin walls entirely unprotected out doors in a very cold climate, it might be said that more honey would be produced in one than the other, because the bees might nearly all die in one and not in the other in winter, and that would make a difference in the amount stored the next summer.

2. Not if the single-walled hive is well packed.

The "Put-Up" Plan

I do not understand the "put-up" plan as per page 167-8 of "Fifty Years Among the Bees." On page 168 you say, "The cover is put on the supers, and the 'put-up' hive is filled with brood, and is placed over all."

If I were to do this I would put a solid board over the supers. Then I suppose you mean to place the brood-chamber of the "put-up" hive directly over all. But there would not be any place for the bees to get out.

Should a queen-excluding board be over the supers? Or if a solid board, would I have to arrange the brood-chamber on top so as to leave an entrance for the bees to get out? PENNSYLVANIA.

ANSWER.—You have it straight until you say, "I suppose you mean to put the brood-chamber of the 'put-up' hive over all." I think the whole thing will become clear if you note that I do not say "brood-chamber," but that the "hive" is placed over all, and then remember that ordinarily when we talk about a hive we mean not merely the brood-chamber or hive-body, but the bottom-board along with it.

To be specific about it, the lower hive has placed on it the super, or supers, and these are covered up just as they would be if no other hive was to be placed over. Then on top of this is placed the put-up hive with its bottom-board and its cover. This, you will see, leaves an entrance for the bees in the upper hive, just as there would be if, instead of being put up, it were set on a stand down on the ground. There is no possible communication between the two hives, and if a bee goes from one hive to the other it can only do so by going out at one entrance and going in at the other.

Stanley Queen-Nursery

I want to ask about the Stanley nursery for queens. I have Dadant, Hutchinson and Root on bees, but none of them have anything about it. I would like to know where one can be procured or how made? I am anxious to have one. PENNSYLVANIA.

ANSWER.—The essential part of a Stanley queen-nursery looks like a cartridge shell for a gun. The shell is made of excluder-zinc, and is 2 inches long, with an inside diameter of ¾ inch. The perforations of the zinc run transversely. It is simply a piece of excluder-zince 2.36 inches long and 2 inches wide, rolled up into cylindrical form and soldered together. The two ends are closed by common gun-wads. The workers have free entrance to the cylinders, while no queen can enter to make an attack. In the little experience I had with them I found that the young queens were sometimes killed by getting caught in the slots, but not often. We have, on the other hand, the advantage over other nurseries that the workers can have free access to the cells, and it is claimed, especially in Europe, that the close contact of the workers has a very importannt influence on the occupants of the cells. A number of these cartridges—I think 48—may be contained in an ordinary Langstroth brood-frame, and be put between the brood-combs in a hive. They can probably be had from the inventor.

Don't hesitate to ask all the questions you like. You are quite right in thinking that the answers may be of benefit to others.

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REPORTS AND EXPERIENCES

A Queer Way of Capturing a Swarm

Last May I was expecting swarms, and one day all of my bees, about 50 colonies, were roused up They were flying and humming like in robbing time. The whole yard was full of bees, and I thought they were going to swarm all at once. It was something unusual, and I could not find the reason; the bees had never acted this way before. I found out shortly, however.

My neighbor's wife was cleaning house, and swept out some spilt sugar and shook out sugar sacks. When my bees discovered the sugar they flocked there by the thousands to gather it up. When the bees came so thickly she thought that it was a stray swarm, so she took a big dish pan and filled it with sugar and fed the bees, and got a box and covered the bees with it. Of course, they went out and in, and she thought she would have a fine swarm of Italian bees, but towards evening their numbers lessened. She did not know how to make them stay in the hive, so she sent word to me to come over and see about the swarm she captured. When I lifted up the box it was empty of both bees and sugar. I kindly explained to her that it was cheaper to buy a swarm in a hive than to try to catch it in the air.

The Dalles, Oreg. JOHN PASHEK.

Fine Report from Indiana

My bees did nicely last summer, netting me more than $20 per colony in cash, besides all the honey we could use and some to give away. Besides I increased from 6 to 14 colonies, and have plenty of honey in the brood frames to place in the hives when spring opens up E. H. UPSON.

Uber, Ind., March 4.

Bees Higher in Price in California

Southern California is anxiously looking for rain. It has been cold and cloudy for several days, but no rain. Bees in many localities are light in stores and short of bees. Should it be a late spring many would have to feed, while if the honey flow came on early much would be lost before the colonies were strong enough to gather surplus

Buyers from Utah and Nevada are looking for bees in southern California. Not many years ago it was very easy to buy colonies at from $2.00 to $3.50, while now from $4.00 to $6.00 is nearer what a practical bee-keeper would ask. Our industry is each year being recognized more and more at its true value. L. L. ANDREWS.

Corona, Calif., March 21.

Does Bee-Keeping Pay?

We claim it does when properly conducted. We commenced last spring with 80 colonies, increased to 110, and took off 7200 pounds of comb honey and 120 pounds of extracted, leaving the bees strong and heavy for winter. We hope to do better this year, as the bees are in better shape. We could not get along so well without the old American Bee Journal.

I enclose a picture of part of our apiary. The secret of our success is *young queens* and *strong colonies*. We want a bushel of bees when the clover begins to bloom.

Our bees are packed in chaff, and our losses are very light; not over 3 percent in the last 3 years. We use the Italians I bought my first imported queen from Mr. Dadant some 30 years ago. J. E. WALCHER.

Broomfield, Colo., Feb. 22.

PART OF J. E. WALCHER'S APIARY IN COLORADO.

More About Swiss Bees

About the article written by Mr. Adrian Getaz, in the American Bee Journal for February, 1913, I wish to tell something more about the Swiss bees.

Mr. Getaz says that the majority of hives are skeps or box-hives, in which drones are reared in large quantities. That was true in German-Switzerland some 50 years ago when the bee-men went from house to house and cut the honey out. Of course, those empty spaces in the skeps were built out next season with drone-comb. Box-hives we never had; at least I never knew of any. Since we went over from the skeps to the movable-frame hives, we now find that we get plenty of honey but no swarms.

The importation of Italian or Carniolan bees went on for some 20 years. It was ample time to try them. When the swarming season was over, the honey was gone, too, and all we could do was to feed them to keep them from starvation.

The Burke-Jeker-Swiss hive, as it is called out there, and mostly used in German-Switzerland, is nearly as large as the Dadant hive. The Dadant hive is all right in a country where the summer is warm and the honey season long, but in our climate it is too cold in winter and too large in summer.

As to the price of honey, as an average extracted is 20 cents a pound, but I am sure that section honey would bring as high as 80 cents a pound in Lucerne. "There are always some apiarists who cannot see beyond the tips of their noses." That's true, but if Mr. Getaz believes that the whole German-Swiss Bee-Keepers' Association belongs to that class, he might be a little mistaken There are 8000 members in that association.

Last summer, when I was appointed deputy, and went out and inspected bees, I didn't find the strongest Italian colony with more honey than my blacks.

One of the queens that I imported in the summer of 1911, didn't lay one drone-egg through the whole summer of 1912. But as I wanted to rear drones from that colony, I gave them plenty of drone-comb and fed them when no honey was coming in, but without any sign of eggs or brood in drone-comb. I have no queens to sell, and I never will sell any if I do not find them just as good as or better than the Italians. If we had a non-swarming strain of bees, would it not be much easier to fight foul brood, for we would not have to go out into the woods to get the bees out of trees that might be infected, too? XAVIER WIDMER.

Highland, Ill., Feb. 21.

The 10-Frame Hive Should Be Wider

I started bee-keeping in the spring of 1908, and after much careful study of the various styles and sizes of bee-hives, I decided that a hive containing 10 Langstroth frames was the one to adopt, and I also decided that the frames should be provided with self-spacers. Now, with 4 years' experience the decision remains the same.

But as regards the size of the standard 10-frame body, I never did believe it was right. I wrote to a leading manufacturer that the hive was too narrow for 10 self-spacing frames. But the answer came, "You can get them out." With me it is difficult, and often cruel to the bees, to remove the first frame after the bees have built the combs a little bulging, and gotten the frames well glued in, the most accessible frame often being heavy with honey.

Let us interchange these combs, perhaps with combs of a different hive, and I suppose the manufacturer will say, "You can get them in." But rather than suffer this squeezing and pinching, I am using only 9 frames and a dummy of ⅞-inch lumber with many of my hives. In doing so I am one full frame of honey nearer starvation and the swarming fever.

Surely, when this notoriously pre-eminent

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10-frame self-spacing hive is properly made, it will contain a properly made dummy, as may be seen on page 137 of Dr. Miller's book, "Fifty Years Among the Bees " The important feature of this dummy is that both sides are smooth, with no raised parts or cleats to destroy the bee-space. I suggest that we adopt a hive-body 16½x20 inches, outside measure, as a standard for self-spacing frames. But if Dr. Miller and others say it requires ⅛ inch more, I gladly agree.

The bees appear to be wintering nicely here. I have never lost a colony from bad wintering yet. I use sealed covers and no upward ventilation. Did you ever try a hose to test your colonies in winter? Just put one end to the entrance, the other to your ear and thump lightly. Why, it sounds as if a large planing mill was in operation within that little hive. W. L. SPINK.

Varysburg, N. Y.

Bee-Keeping in Louisiana

The question has been asked by some northern man if bees couldn't be bought in the South cheaper than they could be wintered in the North?

I think the South can furnish the North with bees after Feb. 1. I looked in several hives in two of my yards, and found 4 and 5 frames of brood, young bees and drones.

The black bees in this country are very good honey-gatherers, and gentle. They are not as good as the Italians, but they are all right to start with. We also have what we call the *little black* bee. I have been among them but once, and don't care to try them again.

Since the pound-package is a success, bees can be sent by express very cheaply. Fruit-trees are in bloom, willow has budded out, and will soon be helping the bees. Then tupelo gum will come in: that is a good honey-producer here. F. M. MORGAN.

Hamburg, La., Feb. 23.

Wintering Bees Packed on the Summer Stands

Every colony wintered without loss, and in fine condition.

Twenty-two years ago sugar was very dear in our country and honey was cheap I left all supers on until all were sealed. In September I took off the supers and took all combs out of the brood-chambers except five and six combs of sealed honey. In early spring I took out the division-board and filled out the hives with combs of honey. As soon as sugar got cheaper I extracted the honey, and fed all colonies sugar syrup. My hive has nine frames; plenty large enough to suit me. WM. MCEVOY.

Woodburn, Ont., March 13.

Shipping Bees Out of Monterey Co., Calif.

Almost all of the bee-keepers out here were very much discouraged up to the present rain storm, which tends to better the prospects of a honey crop, although it will take a great amount of rain to bring the moisture down deep enough to last and be of any benefit to the sage flow, which we all depend upon for surplus About three carloads of bees were shipped out of this county during the last few months to avoid the dry weather and the prevailing contagious diseases. WM. HACKMANN.

Salinas City, Calif , March 10.

Wintered 44 Colonies Without Loss

I started a year ago with 44 colonies of bees, and secured 3707 pounds of honey; most of it in sections. I sold most of it at 13 cents to the stores, and 12½ cents for extracted.

I have 44 colonies in the cellar. I may sell about half of them, as I am in my 75th year, and am too stiff to climb trees for swarms. I have no trouble wintering in the cellar. My cellar is dry I never had better honey than this year. If I were 30 years *young* I could make money with my bees, as I learn something every year. WM. CLEARY.

Algona, Iowa, March 11.

No Winter Loss

Bees have wintered well again. This is now the 40th winter that I have wintered without loss. In 1871-72 I was cleaned out. I then invented the chaff hive, which I long ago discarded for something better. This year I wintered 4 nuclei, but so far I have no need for an extra queen. It is well, however, always to have extra queens on hand in early spring. H. H. FLICK.

Murraysville, Pa., March 10.

Classified Department

[Advertisements in this department will be inserted at 15 cents per line, with no discounts of any kind . Notices here cannot be less than two lines. If wanted in this department, you must say so when ordering.

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NUTMEG ITALIAN QUEENS, leather color. After June 1, $1.00. A. W. Yates,
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GOLDEN QUEENS that produce 5 and 6 band bees. Untested, $1.00; Tested, $3.00.
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BEES AND QUEENS from my New Jersey apiary. J. H M. Cook,
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FOR SALE.—Bees by the pound, 1 lb., $1.25; ½ lb., 75c. Italian Queens, $1.00 each.
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SELECT MATED Howe strain Queens. Send for circular. One untested, $1.00; six for $4.50; $8.50 per 12. Ready about June 10.
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QUEENS — Improved red-clover Italians, bred for business; June 1 to Nov. 15. Untested queens, 75c; select, $1.00; tested, $1.25 each. Safe arrival and satisfaction guaranteed. 1A1y H. C. Clemons, Boyd, Ky.

ITALIAN QUEENS—3-band bred from the best stock procurable for honey-gathering qualities. Untested, June, $1.00; after, 75c. Tested, $1.50; select tested, $2.00 5A4t
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GOLDEN QUEENS that produce Golden Workers of the brightest kind. I will challenge the world on my Goldens and their honey-getting qualities. Price, $1.00 each; Tested, $2.00; Breeders, $5.00 and $10.00.
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GOLDEN ITALIAN QUEENS, of best strain. All cells built in strong colonies. No foul brood or other disease. Untested, $1.00; tested, $1.50. Cash with order. Booking orders now. Delivery about April 15.
4A3t Ben Robinson, Taylor, Tex.

GOLDEN and 3-band Italians, also gray Carniolan queens. Tested, $1 00 each; 3 or more 90c each. Untested, 75c each; 3 to 6, 70c each; 6 or more, 65c each. Bees per lb , $1.25; nuclei per frame, $1.50. A discount on orders booked 30 days before shipment. 1Atf
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QUIRIN'S famous improved Italian queens, nuclei, colonies, and bees by the pound, ready in May. Our stock is northern-bred and hardy; five yards wintered on summer stands in 1908 and 1909 without a single loss. For prices, send for circular.
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FOR SALE—Choice Golden Queens that produce Golden bees equal to any.
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MOORE'S Strain and Golden Italian Queens. Untested, $1 00; six, $5.00; twelve, $9.00. Carniolan, Banat and Caucasian Queens, select, $1.25; six, $6.00; twelve, $10.00. Tested, any kind, $1.50; six, $8.00. Choice breeders, $3.00. Circular free. W. H. Rails, Orange, Calif.

THREE-BANDED ITALIAN QUEENS—Nothing but the Leather-Colored Bees bred by me. If you want supers of honey, use my Queens. Perfect Queens of Quality or money refunded. $1 00 each, or $9.00 per dozen.
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THREE-BANBED Italian Queens and Bees. Untested queen, 75c each; six, $4.25; twelve, $8.00. Tested, $1.25 each; six, $7.00; twelve, $12.00. For select queens add 25c each to the above prices. Nuclei without queens, 1-frame $1.75; 2-frame, $3.00; 3-frame, $3.50 For nuclei in quantity lots, and bees by the lb., write for prices and circular. 5A6t
Robert B. Spicer, Wharton, N. J.

WE will requeen all our 2000 colonies this spring with young queens bred from our best home and imported Italian stock. We offer the one-year old queens removed from these hives at 40c each; untested queens, this year's breeding, 60c each. Special reduced prices for 100 or more, either old or young. We breed for business, not looks. No disease; delivery guaranteed. Book orders now to insure early delivery.
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FOR GOOD QUEENS AND QUICK SERVICE, you can't do better than place your order with me. I am prepared to handle any size of order at the following prices (Carniolan, 3-band Italian and Golden): One untested queen, $1.00; six for $5.40; twelve for $9.60, One tested queen, $1.50; six for $8.40; twelve for $15.60 One-frame nuclei, untested queen, $2.50; six 1-frame, $15.00; one-frame nuclei, tested queen, $3.00; six 1-frame, $17.40. Full colonies, one for $7.50; two for $14.00. If more frames are wanted than are listed, add $1.00 each for as many frames as are wanted with nuclei. No disease, and satisfaction guaranteed. W. J. Littlefield,
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WANTED—Comb and extracted honey, and beeswax. Write us. Hildreth & Segelken,
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WANTED—Choice extracted white and amber honey in barrels or cans. Send sample and price delivered f. o. b Preston.
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11Atf Dadant & Sons, Hamilton, Ill.

FOR SALE

FOR SALE—Our entire stock of hives at reduced prices. Gregory & Son,
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FOR SALE—1750 Shallow Danzenbaker Extractor Frames; nailed. A. I. Root Co. make. Price, $1.75 per hundred. Will sell in any quantity. The Anna Dean Farm,
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FOR the things named in my ad. in April American Bee Journal, I will make prices as follows: Dadant hive (a new one, nailed and painted), $1.50; Lewis foundation fastener, 50c; Rietsche press, $1 00. For all the No's of Gleanings, American Bee Journal, and Review, 1 cent per number.
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Mack Shrontz, Momence, Ill.

WANTED—To exchange queens and nuclei for Field glass, and 4-frame Root automatic extractor for Langstroth frame. 5Atf
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WANTED 200 or less colonies of bees—any style hive or box. For sale 250 painted dovetailed supers for 4¼ sections at 25c each in lots of 25 or more. Correspondence solicited.
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WANTED to form partnership with a good bee-man in a good location. I will furnish my share or all of the capital C. A. Ellis,
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RECLEANED Silverhull Seed Buckwheat, 1 bushel, $1.15; 5 or more, $1.00 per bushel.
5A2t F. O. B., Wm, Vollmer, Akron, N. Y.

DETECTIVES WANTED—Young men to operate in own locality, secret service work. Experience unnecessary. Enclose stamp for particulars. Universal Detective Agency,
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WANTED—Help in a queen-rearing apiary. Male or female. Experienced or to learn. No drinker or tobacco chewer Address.
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PRACTICAL APIARIST and experienced queen breeder is open to engagement, 20 years' experience in the production of comb and extracted honey. Several seasons' experience in the sale and manufacturing of bee-keepers' supplies. Would consider a position as manager or assistant manager of this branch of the industry. No use for liquor or tobacco. References. Wages, $22 to $30 per week. Apiarist, Ayer, Mass.

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INDIAN Runner Ducks, light fawns, also dark penciled, white eggers, $1.00 and up.
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bred in separate yards, ready March 20. Untested, one, $1; six, $5; 12, $9; 25, $17.50; 50, $34; 100, $65. Tested, one, $1.50; six, $8; 12, $15. Breeders of either strain, $5. Nuclei with untested queen, one-frame $2.50; six one-frame, $15; two-frame $3.50; six two-frame $20 40; nuclei with tested queen, one-frame, $3 00; six one-frame, $17.40; two-frame, $4; six two frame $23 40. Our Queens and Drones are all reared from the best select queens, which should be so with drones as well as queens. No disease of any kind in this country. Safe arrival, satisfaction, and prompt service guaranteed.

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Untested $1.00 for one,	$5 for six,	$10.00 for twelve
Tested $1.50 for one,	$8 for six,	$15.00 for twelve

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A word about the power extractor I purchased from you through H. L. Jones, of Goodna. I found it to work very satisfactorily, and it will do all it is claimed to do and more. I use the gasoline engine for several purposes besides driving the eight-frame extractor, such as driving the washing-machine for the lady of the house, and corn cracking and grinding. I consider it one of the best speculations I made in connection with the apiary.

F. C. GOLDER, Pittsworth, Queensland.

Yours of the 16th, also the brake-band for power-extractor, came to hand. Thanks for sending it so promptly. This is my second season with the power extractor. I would not like to be without it now, even if I had only fifty colonies.

DAVID RUNNING, Grindstone City, Mich., July 19, 1910.

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F. D. KING, Athens, Ohio. Aug. 16, 1912.

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V. V. DEXTER, North Yakima, Wash., Jan. 19, 1911.

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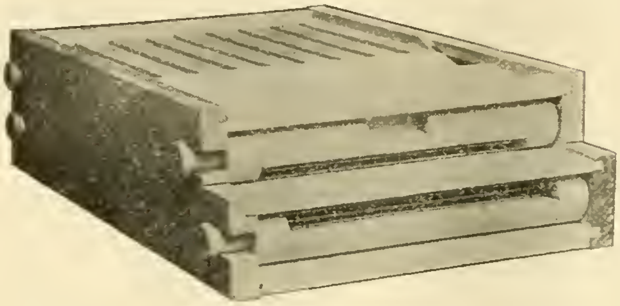

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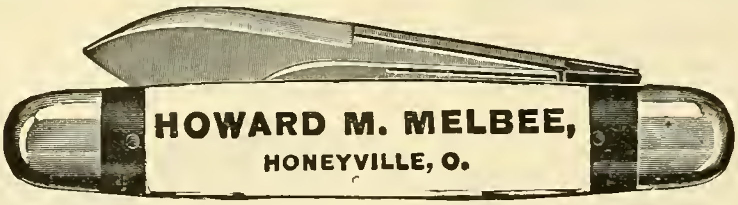
$2.50 F. O. B. LIVERPOOL, FOR 10 FRAME SIZE.

Dr. Chas. G. Schamu, Liverpool, N. Y.

BEE - KEEPER'S NOVELTY POCKET - KNIFE



Your Name and Address will be put on one side of the handle as shown in the cut, and on the other side a picture of a Queen-Bee, a Worker-Bee, and a Drone-Bee. The handle is celluloid, and transparent, through which is seen your name. If you lose this Knife it can be returned to you, or it serves to identify you if you happen to be injured fatally, or rendered unconscious. The cut is the exact size; it is made of best steel. When ordering be sure to write exact name and address. Knife delivered within two weeks after we receive order.

Price, postpaid, $1.00; or with a year's subscription to the American Bee Journal—both for $1.80; or given FREE as a premium for sending us 3 New subscriptions at $1.00 each.

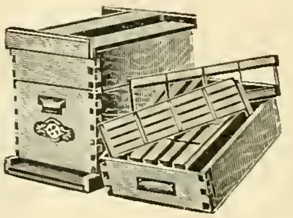
American Bee Journal, Hamilton, Illinois.

AT LITTLE ROCK, ARK.,

You can get your Bee Supplies and save time by sending your order to us, we can save you in FREIGHT as well as Money on supplies. Send for catalog of Supplies and Queens.

One Untested Queen, $1.00; six, $.500; twelve , $9.00. One Tested Queen, $1.50; six, $8.50; twelve, $15.00. One-frame Nuclei, Untested Queen, $2.50, six 1-frame, $15.00; one-Frame Nuclei, Tested Queen, $3.00; six 1-frame, $17.00.

If more Frames are wanted than are listed, add $1.00 each for as many frames as are wanted with Nuclei. No disease, and satisfaction guaranteed.



Little Rock Bee-Supply Company
1015 W. 7th Street - - - - Little Rock, Arkansas

FOLKS LIKE

Michigan Comb Honey

However, it is so scarce that they can't get much of it. It is a case of under production. Better make this year a comb honey year. Pages 12 and 13 of our Catalog show comb honey outfits—and they are all Root's goods. Beeswax wanted.

Italian Bees and Queens in half-pound and pound packages.

M. H. HUNT & SON,
143 Condit St., - Lansing, Mich.

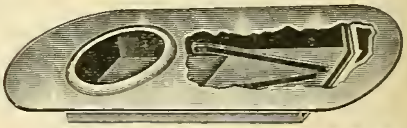
If You Need QUEENS

for Queenless Colonies, you want them in a hurry. We can fill your order for choice tested Queens by return mail for $1 00 each. Three band Italians No disease. Satisfaction guaranteed. Send for price-list.

J. W. K. SHAW CO.,
LOREAUVILLE, Iberia Parish, LA.

P-O-R-T-E-R

(Trade mark)



BEE-ESCAPE

SAVES { HONEY TIME MONEY } AT ALL DEALERS

Each, 15c; Dozen, $1.65, postpaid

If your Dealer does not keep them, order from Factory, with complete instructions.

R. & E. C. Porter, Mfrs.
Lewistown, Illinois

3-Band Long-Tongued

Red Clover Italian

QUEENS

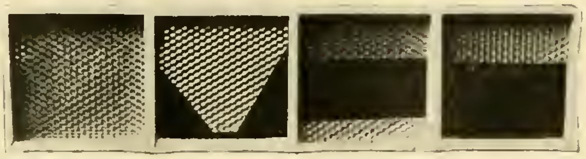
FOR SALE.—The 3-band queens are of the A. I. Root Co.'s improved long-tongued bees which have proven themselves to be the best of honey-producers. I use the Doolittle and Miller plans for queen-cells. One untested queen, 75 cts; 6 for $4.00; 12 for $7.50; 25 for $13.50; 50 for $25.00; 100 for $45 00. Double this price for tested queens. One-frame nucleus, $1.50. 2-frame, $2.50; 3-frame, $3 50. To each nucleus add the price of queen. No personal checks accepted

J. B. ALEXANDER, CATO, ARK.

"Falcon" Foundation!

Made in Our Plant at Falconer, N. Y.

From the sweetest and purest beeswax that can be obtained. No old stock—made daily by our own superior methods. Falcon foundation is coming in more constant use every year, and has proved itself to be most readily accepted by the bees.



Other Goods:—Double grooved Hoffman brood-frames as well as sections will be needed for spring use. As it takes a lot of time to put up frames and sections with starters or full sheets, it would be well to look up your requirements. It will give you ample time by ordering now.

Light Standard Brood,	**1 lb., 58c; 5 lbs., 57c.**	**Light Section,**	**1 lb., 65c; 5 lbs., 64c.**
Extra Light Standard Brood	**1 lb., 60c; 5 lbs., 59c.**	**Extra Light Section**	**1 lb., 70c, 5 lbs., 67c.**

Write for samples of our foundation and Red Catalog postpaid. All goods guaranteed. A trial will convince you.

Distributers everywhere. Factory W. T. Falconer Mfg. Co., Falconer, N. Y.
Central States distributers: H. S. Duby, St. Anne, Ill., C. C. Clemons, Bee-Supply Co., Kansas City, Mo.

W. T. FALCONER MFG. COMPANY, - FALCONER, NEW YORK
Where the good bee-hives come from

BEE-KEEPING IS A BREEDING PROBLEM.

And The Queen Is The Important Factor in It.

WHEN BUYING QUEENS WHY NOT BUY THE VERY BEST

Bred from well selected stock and reared under most advantageous conditions established through fifteen years of practical and scientific experience.

Choice Italian Queens Untested, during April and May, $1.25 each. In lots of ten or more, $1.15 each. Prices in larger lots upon application. Send for four page circular on the Italian Bee.

RALPH BENTON,
The Tuscan Apiaries
OFFICE: 2074 WEST 27th ST. LOS ANGELES, CALIFORNIA

"Griggs Saves Your Freight"

TOLEDO

"Griggs Saves Your Freight"

We have made arrangements with a large Southern breeder to furnish us with BEES and QUEENS, and orders will receive our prompt attention commencing April 1. First come, first served. Be first.

ORDER BEE-SUPPLIES NOW.—Large car of new goods on the way to fill the rush of early orders coming in. Send your orders now.

POULTRY FEEDS AT WHOLESALE.—Write for special prices of feed to be shipped with your order of bee-supplies. Cut out the middle man.

BEESWAX.—We can use five tons of good first-class wax. Send yours in now. Cash or in trade. Free catalog. Ask for one.

S. J. Griggs & Co., 24 N. Erie St., Toledo, Ohio

CROP REPORT BLANKS

Will be sent to every subscriber of the "Review" in proper time, and the crop conditions as given by these reports will be published later.

BRINGING BUYER AND SELLER TOGETHER

for the sale of your honey crop will be another work that will be carried on the same as last year.

CANS AND GLASS PACKAGES

will be furnished the subscribers by the "National" the same as last year. We may have better prices.

THE NATIONAL CONVENTION REPORT

began in the March number. Don't you want to read it? One dollar gives you the "Review" a year. Your sample copy is waiting your request. Better send for it

The Bee-Keepers' Review, 214 Hammond Bldg., Detroit, Mich.

We Make a Specialty of Manufacturing

SECTIONS

They are the Finest in the Land—None Better.

Our Prices will make you smile. We want to mail OUR BEE-SUPPLY CATALOG to every bee-keeper in the land. It is FREE. Ask for it.

H. S. Duby, St. Anne, Ill., carries a full line of Our Goods, and sells them at our regular catalog prices.

AUG. LOTZ & CO.
Boyd, Wis.

Please mention Am. Bee Journal when writing.

W.H.Laws

Will be ready to take care of your queen orders, whether large or small, the coming season. Twenty-five years of careful breeding brings Laws' queens above the usual standard; better let us book your orders now.

Tested queens in March; untested, after April 1st. About 50 first-class breeding-queens ready at any date.

PRICES: Tested, $1.25; 5 for $5.00; Breeders, each $5.00. Address

W. H. Laws, Beeville, Texas.

Please mention Am. Bee Journal when writing.

Comb - Honey Producers

Send for illustrated circular of new Rauchfuss Combined Section Press and Foundation Fastener. Sold with guarantee to give satisfaction, and delivered anywhere in U. S. on remitiance of $3.00.

Colorado Honey-Producers' Association
Denver, Colorado

HONEY AND BEESWAX

Chicago, April 17.—Comb honey has cleaned up; this market being practically bare at this time. But that is not the fact with extracted, and there is especially heavy offerings of the alfafa and sweet clover grade. Fancy comb brings 17@18c per pound with other grades from 1@5c per pound less. Extracted clover and lindens bring 9@10c per pound. Other white honeys 7½@9c per pound. Beeswax from 31@32c per pound.
R. A. Burnett & Co.

Indianapolis, April 18.—The market is practically bare of fancy white comb honey. No 1 white is selling at 16@17c per pound; amber comb in slow demand and at varied prices. Best extracted sells at 11@12c per pound in 5-gallon cans, according to quantity at one shipment. Beeswax is in good demand, and producers are being paid 30c per pound, cash. Walter S. Pouder.

Los Angeles, April 15—Stocks of white extracted honey on the Coast are entirely exhausted, and are not quotable at any price. Light amber extracted honey is in light supply, and is quotable in carload lots at 6¾c f. o. b. Coast. Comb honey is in very light supply, and there is scarcely enough left for local consumption. Beeswax is selling to eastern buyers at about 30c per pound.
Hamilton & Menderson.

Cincinnati, April 17.—There is a fair supply of comb honey on the market, and we are selling our fancy double-decker comb honey at $3.75 to $4.00 a case; fancy extracted honey in 60-pound cans at 9@10c a pound, and amber extracted honey in barrels at 6½@8c a pound, according to the quality and quantity purchased. For choice bright yellow beeswax we are paying 28@30c a pound delivered here, and if taken out in trade 2c a pound more. The Fred W. Muth Co.

Kansas City, Mo., April 17—The suppiy of comb honey is entirely exhausted. We still have some demand. The supply of extracted honey is light: demand also light We quote as follows: Extracted, white, per pound, 8@8½c; amber, 7@7½c. Beeswax, per pound, 25@28c.
C. C. Clemons Produce Co.

San Francisco, April 15.—The demand for comb honey is very slight; only for dark and cheaper grades. New crop soon expected. Extracted, 7½@8c for water white; light amber, 6½@7c, and others 5@6½c. Beeswax 24@30c, according to quality and color. Our late rains may help, but prospects are not so favorable for a good season here in central California, owing to the winds which have dried up everything.
John C Frohliger.

Cincinnati, April 18.—The market on comb honey is in good demand, with a fair supply. No 1 white selling at $3.65 per case of 24 sections wholesale, and $4 00 per case retail. There is no demand for off grades. Light extracted honey in 60-pound cans, 8@8½c. White extracted honey in 60 pound cans, 9@10c. Beeswax is selling at $34 per 100 pounds.

The above are our selling prices, not what we are paying. C. H. W. Weber & Co.

Denver, April 18—We quote comb honey in a jobbing way at the following figures: No. 1, $3.05; fancy, $3.15 per case of 24 sections. Extracted honey, white, 9c; light amber, 8c; strained, 6¾@7c. We pay 28c in cash and 30c in trade for clean, yellow beeswax delivered here.
The Colo. Honey-Producers' Ass'n,
Frank Rauchfuss, *Mgr.*

New York, April 28.—We have really nothing to report of any consequence. Some few little lots of comb honey still arriving, but not to cut any figure. If in good condition, it will bring about the same price as in our last quotation, but where some lots are beginning to show crystallization, they will have to be sold at a much lower figure. Extracted honey, all grades, is very quiet. While the stock is not heavy, there are shipments coming in right along from the West Indies, more than to supply the demand. No change in prices. Beeswax steady at 30@32c per pound, according to quality. Hildreth & Segelken.

Boston, April 15.—Fancy white comb, 16@17 per pound; No. 1, 15@16c. Fancy white extracted, 11@12c; light amber, 9@10c; amber, 8@9c. Beeswax, 30c. Blake,-Lee Co.

There has been no new blood added to my strain for over 8 years.
They are
Pedigreed
Penn G. Snydor
Swarthmore, Pa.

H. J. PFIFFNER
Wholesale and Retail dealer
in Bee-keepers' Supplie
Send for Catalog
Emmetsburg, Iowa.

BARNES' Foot-Power Machinery

Read what J. I. Parent, of Charlton, N. Y., says: "We cut with one of your Combined Machines, last winter, 50 chaff hives with 7-in. cap, 100 honey-racks, 500 brood-frames 2,000 honey-boxes, and a great deal of other work. This winter we have double the amount of bee-hives, etc., to make, and we expect to do it with this Saw. It will do all you say it will." Catalog and price-list free

Address, W. F. & JOHN BARNES
995 Ruby St., Rockford, Ill.

Notice to Bee-Keepers

I am now taking orders for pound packages and nuclei; also for my leather-colored strain of Italian queens mated on an island, and bred in their purity. Free from all disease. Prices made on application. My guarantee — Your money back if not satisfied; a liberal discount on all large orders. Reference, The American Exchange Bank of Appalachicola, Florida.

A. B. Marchant

GOLDEN ADEL QUEENS
AND BEES BY THE CAR LOAD

You will make money if you deal with me and get my factory price on Bee Supplies. I have millions of fine Sections. I am the oldest and largest Bee Supply manufacturer in the Northwest. Send for Catalog.

CHARLES MONDENG,
145 to 160 Newton Ave. N.
MINNEAPOLIS, MINN.

Eastern Bee-Keepers

Furnishing bee-supplies has been our business for 22 years. We are also honey-producers, operating several hundred colonies for honey. We have started many people who have made a success of the business. We still furnish them their supplies. They stick to us. You will if you get acquainted. We advocate only practicle articles. Let us mail you our catalog on what you may need.

I. J. STRINGHAM.
105 Park Place, New York City
APIARIES: Glen Cove, L. I.

QUEENS and SUPPLIES

Complete queen circular on request.

Largest stock bee-supplies south Ohio River. 64-page catalog on request.

The Penn Co., Penn, Miss.

OUR HAND-MOORE STRAIN
3-Band Italians

Are the best Honey-Gatherers. They spoil our white-clover honey by mixing it with red clover. Record tongue reach 23-100 of an inch. Bred strictly for business. Untested 75c; 12 for $8.00; 50 for $25 00.
LATSHAW HONEY COMPANY,
CARLISLE, IND.

"If goods are wanted quick, send to Pouder."

BEE-SUPPLIES

EQUIPMENT Store room built expressly for the business; large concrete basement with just enough moisture to prevent breakage in sections; no shrinkage in dovetailed corners of supers and hives.

QUALITY Root goods at factory prices. The kind that I have sold for nearly a quarter of a century, and the kind that you can afford to recommend to your neighbors. I might have increased my profits for a short time by handling other goods, but I would not have remained so long in business. Many articles in my catalog can reach you by Parcel Post, and I assume all responsibility in safe delivery of the goods. Catalog free.

WALTER S. POUDER, Indianapolis, Ind.
873 Massachusetts Avenue

Dr. Henry Jones Says:

That Every Bee-Keeper Should Have a **BOYUM SECTION PRESS** and a **BOYUM FOUNDATION FASTENER.** Good reason why. They are inexpensive and unequalled for SPEED, EFFICIENCY and PRACTIBILITY. Send for circulars telling all about them to **BOYUM APICULTURE CO., Rushford, Minn.**

COMB FOUNDATION

WITH THE SAME TASTE
WITH THE SAME SMELL
WITH THE SAME FIRMNESS
AS THE COMB THE HONEY-BEE MAKES

How do you Obtain Yours?

THE OLD WAY:—By selling your Beeswax. Reasonably sure but expensive.

THE DITTMER WAY:—By shipping your wax to us and having it made into Comb Foundation and then returned to you.

Write us for further information and samples, also prices and discounts on Bee-Supplies

Gus Dittmer Company, Augusta, Wisconsin

Rebuilt Remington Typewriters (No. 6) or Smith Premier Typewriters (No. 2)

Prices, $30 to $35. Send $5.00 down and we will send the machine. **GREAT OPPORTUNITY.** Address,

Remington Typewriter Company
(Incorporated)
325 Perry Street, Davenport, Iowa

Bee-Supplies

We are Western Agents for
"FALCONER"

Write for Fall Discounts—we can save you money. 1Atf

C. C. Clemons Bee-Supply Co.,
128 Grand Ave., Kansas City, Mo.

PAGE-KENKEL MFG. CO.

MANUFACTURERS OF THE
"NONE BETTER"
BEE-KEEPERS' SUPPLIES.

Thirty Years' Experience

Perfect sections from young, white, basswood. White Pine Hives and Supers, Excellent Shipping-Cases, Brood-Frames, Separators, etc. We invite your correspondence.

Golden or 5 Band, 3 Band Italian and Carniolan Queens.

Untested Queen, 1 for $1.00. Tested Queen, 1 for $1.50. Nuclei with untested Queen, 1 frame $2.50, two for $3.50. Nuclei with tested Queen, 1 frame $3.00, two for $4.00. Quick service and satisfaction guaranteed.

Page-Kenkel Manufacturing Co.,
New London, Wis.

English Honey-Spoon.

This fine 90c Honey-Spoon and the American Bee Journal for one year—both for only $1.75. Send all orders to the American Bee Journal, Hamilton ,I

ITALIAN QUEENS!

Northern bred

Superior winterers, second to none. My free list explains it all. Untested, $1.00; select tested, $1.50. Bees by pound or half pound. Plans, "How to Introduce Queens" 15c; "How to Increase" 15c; both 25c.

E. E. MOTT - Glenwood, Mich.

FOR SALE

YOUNG ITALIAN BEES

½ lb., $1.25; 1 lb., $2.00; 2 lbs., $3.75; 3 lbs., $4.50. Untested Queen, $1.00; Tested, $2.00. Nuclei, $1.25 per frame. No disease. Also Apiaries of from 50 to 500 colonies.

Would like to correspond with anyone desiring location in fine, sweet clover belt, where the queen-rearing business or shipping bees by the pound can be carried on under ideal conditions. Always have big swarms issue by April 1.

Stover Apiaries,
Mayhew, Miss.

AN ACTIVE SEASON JUST AHEAD!

A carload of perfectly new goods is just on hand from the factory. This brings up our assortment so that we can now furnish almost anything listed in the catalog at once.

Hives should be ordered at once if they are to be ready for spring. Frames, and other inside fixtures too, should be put together now; and as this is a dull season with most of our customers, the work can be done now with no extra expense.

If you are wanting any special goods, orders ought to be in our hands within the next few days. Other cars will be coming from the factory, and we can save you considerable in transportation charges by having your goods come with ours in the cars.

Our new catalog is out, and mailing nearly completed. If you are not on our mailing list, send us a postal-card request for this catalog.

If you want to buy in quantities considerably larger than quoted in the catalog, give us a list of your needs and we will quote price accordingly.

If you have never tried Root quality goods, make a beginning this season. You will not be disappointed in results. Our branch is maintained for service in this line, and we can give it to your entire satisfaction.

We are sole agents in Ohio for the Roller Tray Incubator and Brooder, the best in the market. Write for catalog.

C. H. W. WEBER & CO.

2146 Central Avenue.

CINCINNATI, - - - - - - - OHIO.

DADANT'S FOUNDATION

DADANT'S FOUNDATION

DADANT'S FOUNDATION

DADANT & SONS, Hamilton, Ill.

Dear Sirs :—In reply to your favor, I take this opportunity to let you know that I am a customer of yours. I used considerable of your Surplus foundation some time ago, but got side-tracked. I would have saved money by using your foundation. R. M. Guthrie, Reno, Nev.

DADANT & SONS, Hamilton, Ill.

Dear Sirs:—Mr. N. E. France's recommendation of your goods is all O. K., but I have one that is more convincing, at least for me. I own five yards, and nearly all the combs in them are drawn from Dadant's foundation. There must be a reason.

J. M. Donaldson, 51 E. 3d St., Mooreston, N. J.

Agents Everywhere **Write Today**

DADANT & SONS.

HAMILTON, ILLINOIS.

Vol. LIII.

1913

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AMERICAN BEE JOURNAL

JUNE

AMERICAN
ESTABLISHED IN 1861
OLDEST BEE PAPER IN AMERICA
BEE JOURNAL

PUBLISHED MONTHLY BY
American Bee Journal
1st Nat'l Bank Bldg. Hamilton, Illinois

IMPORTANT NOTICE

THE SUBSCRIPTION PRICE of this Journal is $1.00 a year, in the United States of America and Mexico; in Canada, $1.10; and in all other countries in the Postal Union, 25 cents a year extra for postage. Sample copy free.

THE WRAPPER-LABEL DATE indicates the end of the month to which your subscription is paid. For instance, "dec13" on your label shows that it is paid to the end of December, 1913.

SUBSCRIPTION RECEIPTS.—We do not send a receipt for money sent us to pay subscription, but change the date on your address-label, which shows that the money has been received and credited.

Advertising Rate, Per Agate Line, 15c.

14 lines make one inch.
Nothing less than 4 lines accepted.

DISCOUNTS:

3 times 14c a line 9 times 11c a line
6 " 12c " 12 " (1 yr.) 10c a line

Reading Notices, 25 cents, count line.
Goes to press the 25th of the preceding month.

Southern Bee-Keepers!

I have a Large and Complete Stock of BEE-SUPPLIES at **Cordele, Ga.**, and have erected a large Warehouse and filled it with New Bee-Supplies at **O'Brien, Fla.**, near Live Oak, the best shipping-point for all sections of Florida, Southeast Georgia and Southern Alabama.

Send all orders to **CORDELE, GA.**, and state from which point you wish your Supplies shipped. J. J. WILDER.

NO 1913 CATALOGUE! To keep up the old price I will avoid all expenses possible and will not print any catalog. I have some 1912 left. Order from your old catalog, or I will mail you one.

Best white pine hive 1½ story 8 frame, $1.45; 10 frame, $1.60 in lots of 5. Best sections per 1000, $4.40; 2000, $8.60; 3000, $12.60; 5000, $20; No. 2, 50c less. Plain 25c less.

H. S. DUBY, St. Anne, Ill.

BEE-KEEPERS

Your busy season is close at hand, get wise and place your order with the supply dealer who will save you money and serve you best with **Root's Quality** sections, foundation, frames, smokers, extractors, etc. I can serve you without **delay**. My 1913 catalog tells all about these things, besides it contains a lot of information to those interested in bees.

Special attention given to the breeding of three-banded Italian bees and queens.

Catalog free.

EARL M. NICHOLS
Lyonsville, - - - Mass.

Do You Love SWEETS?

Ralph Waldo Emerson Did

He said you can attain to royalty by loving sweets.

> "He who knows what SWEETS .... are in the ground, the waters, the plants, the heavens, and how to come at these enchantments, is the rich and royal man."

"HOW to come at these?" Aye, there's the rub.

How many people miss them! and perhaps some of these many, strange to say, *keep bees.* Want to know how? Send $1.00 for a year's subscription to

The Guide to Nature
Arcadia : Sound Beach, Conn.

It is edited by Edward F. Bigelow, a sweets extractor—in other words, "a bee-man" and a naturalist.

NOW THEN

For Your Early Bee-Supply Orders

Send us a list of the Bee-Supplies you want. Our prices will astonish you.

Also send us your Old Combs—we will render your wax and save you money.

Write for particulars

THE FRED W. MUTH CO.
"The Busy Bee-Men"
204 Walnut Street, CINCINNATI, OHIO

MARSHFIELD GOODS

BEE-KEEPERS :—
We manufacture Millions of **Sections** every year that are as good as the best. **The CHEAPEST** for the Quality; **BEST** for the Price. If you buy them once, you will buy again.

We also manufacture **Hives, Brood-Frames, Section-Holders and Shipping-Cases.**
Our Catalog is free for the asking.

Marshfield Mfg. Co., Marshfield, Wis.

Prices Reduced

ON

Honey as a Health Food

Till further notice, I will fill orders for "Honey as a Health Food"—the great honey-selling booklet—at the following prices:

Sample copy free; 10 copies 20 cents; 50 copies 75 cents; 100 copies, $1.00; 250 copies for $2.00; 500 copies for $3.75; or 1000 copies for $7.00.

These are all postpaid or express prepaid prices. The time to sell the honey crop will soon be here again. It is a fine thing to have a good supply of the above booklets on hand, ready for distribution among those you would like to secure as customers.

Your Name and Address on a Rubber Stamp

It is a nice thing to have a rubber stamp with your name and address. You can then stamp the letters you write, or the envelops you use, or anything at the bottom of the booklets, "Honey as a Health Food," for stamping your name and address.

I can furnish you a Rubber Stamp, with your name and address, at the following prices, postpaid, the stamp being 2½ inches long:

One Line Stamp	30 cents
Two " "	45 "
Ink Pad (2½x3¾ inches)	15 "

All orders will have prompt and careful attention. Address,

George W. York
Sandpoint, Idaho

N. B.—If interested in a location where there is **unlimited and unoccupied bee-range,** also good climate, land, water, and all else that goes toward making a satisfactory home, ask for my **free circular,** giving facts as I have found them since locating in Bonner County, Idaho—the most northern county of the State, bordering on the Canadian line, but west of the Rocky Mountains, which gives it the temperature of Washington and Oregon.

Untested ITALIAN QUEEN-BEES

OUR STANDARD-BRED

6 Queens for $4.50; 3 for $2.75; 1 for $1.00

For a number of years we have been sending out to bee-keepers exceptionally fine Untested Italian Queens, purely mated, and all right in every respected. Here is what a few of those who received our Queens have to say about them.

AMERICAN BEE JOURNAL—
Gentlemen:—Last October I purchased three queens of you for my experiments with different queens, and wish to ask you if queens of this season will be of this stock? One of the Queens is the most remarkable queen I ever owned for prolificness, which she transmits to all her daughters.
Riddle, Oreg., July 4, 1912. L. W. WELLS.

AMERICAN BEE JOURNAL—
Gentlemen:—The queen you sent me came in good condition. She was one of the best I have ever bought. I have her introduced and she is doing business as if to the manor born. I want another of those beautiful queens as soon as I can possibly get it for making up my fair exhibit. Please send a fine one. Such queens certainly advertise your business.
Darlington, Wis., July 31, 1912. C. R. BRIDGMAN.

AMERICAN BEE JOURNAL—
Gentlemen:—I bought a queen of you about 35 years ago, and from her I Italianized 150 colonies of the finest beauties of unusual good qualities. I lived near Milton Center, Ohio, at the time. Yours truly,
Portales, New Mexico, July 10, 1912. J. W. HOUTZ.

We usually begin mailing Queens in May, and continue thereafter on the plan of "first come first served." The price of one of our Untested Queens alone is $1.00, or with the old American Bee Journal for one year, both for $1.60. Three Queens (without Bee Journal) would be $2.75, or six for $4.50. Full instructions for introducing are sent with each Queen, being printed on the underside of the address card on the mailing-cage. You cannot do better than to get one or more of our fine Standard-bred Queens.

AMERICAN BEE JOURNAL, HAMILTON, ILLINOIS

The Ideal Hive-Tool Free as a Premium

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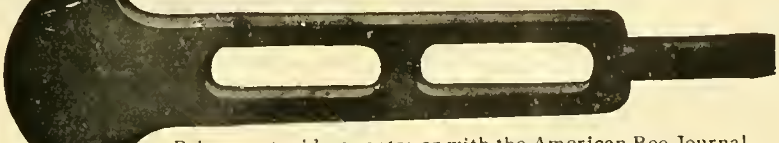

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Business Manager—M. G. Dadant, Hamilton, Ill.

Known bondholders, mortgagees, and other security holders, holding 1 percent or more of total amount of bonds, mortgages or other securities—None.

C. P. Dadant, Editor.

Sworn to and subscribed before me this 24th day of March, 1913.

T. R. KLAY,
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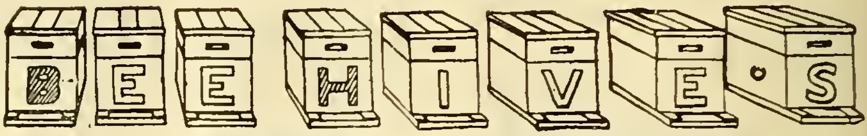

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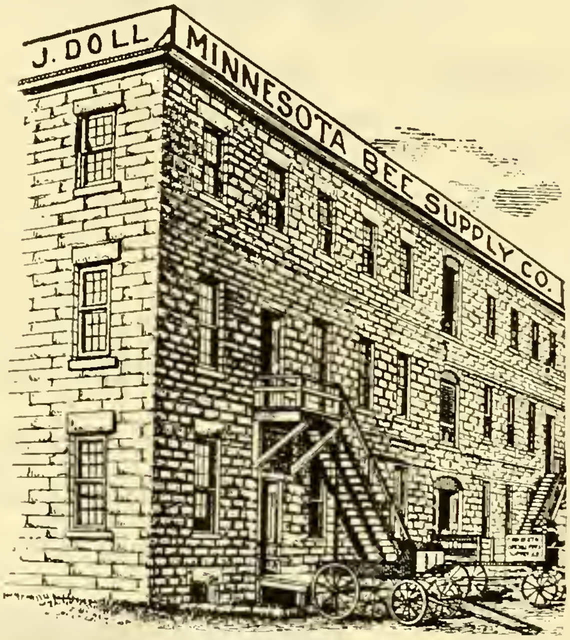

The picture that we showed in the Apr. issue of this Journal was of our mill and property at Buffalo, Minn. This cut shows our factory at Minneapolis.

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Published Monthly at $1.00 a Year, by American Bee Journal, First National Bank Building

C. P. DADANT, Editor.
DR. C. C. MILLER, Associate Editor.

HAMILTON, ILL., JUNE, 1913

Vol. LIII.—No. 6

EDITORIAL COMMENTS

Shipping Bees or Queens—Certificates Needed

Many States now have laws which forbid the shipment of bees without the accompanying certificate of inspection of the apiary from which they are shipped. In States having no inspector, a sworn statement made before a notary or justice of the peace is usually sufficient. We will gladly inform those of our readers needing additional information, and ask the different inspectors to forward a copy of their regulations to this office.

Mailing Queen-Cages in Cotton Bags

We are in receipt from Mr. Frank Rauchfuss, of Denver, of four queen-cages with bees, packed in a light cotton mailing-bag. The bag is of very light texture, admitting the air through. This package has the advantage of protecting the cages from strong air currents, keeping them together more efficiently than a string of twine, and yet leaving sufficient air for their breathing. It is worthy of further trial.

Foul Brood, Wastefulness and the High Cost of Living

The writer one day noticed a little cluster of excited bees on the ground in a poultry enclosure. Upon examination he discovered that they were bent upon gathering a lump of granulated honey, which had been thrown there with other table-waste. The chickens had eaten everything but the wasted honey, butter and bones.

We complain of the high cost of living and seek a remedy in every direction but the right one. The American way is to waste, waste in all directions. We wasted our forests, under the plea that it was more profitable to burn them off than to save them. We waste our coal at the mines, in many places allowing the slack to consume itself by spontaneous conbustion, or by contact with the air. We waste our land, leaving innumerable spots uncultivated, even in the heart of civilization. We waste our manures, often even contaminating our streams by using them to wash away useful fertilizers. But above all things we waste our food.

This reproof is not intended for the foreigner who has been raised on economical methods in a thickly settled country. In all probability, the foreign-born American who reads this has been taught, in his young days, to consider bread and meat as *sacred*, under the plausible plea that he might starve some day, for want of such food as he proposes to throw away, and also because so many millions in the world do not get as much as they want to eat. But our American education is different. Many a bright, neat, sensible and educated American mother thinks nothing of teaching her children to take a heaping plate-full of all kinds of food, and leave half of it unconsumed, in a disgusting heap, made of a mixture of all the dainty dishes served upon the table. Nay, in many cases, children are taught that it is *good manners* to accept or take more of one dish than you can possibly use and leave two-thirds of this upon your plate. Thus meat, gravy, bread, potatoes and other vegetables, fish, butter, jellies, pie and *honey* are carried to the back-yard or thrown into the slop-pail.

When this waste takes place upon the farm, it is but half waste, for the hogs and the chickens consume most of the remnants, so however expensive it may be to feed bread, cakes, jellies or honey to the hogs, the food is not altogether wasted. But what of the cities? How much of this willful and unnecessary waste is made to clog the sewers or sour and rot in the refuse can in the back-lot?

What has this to do with bee-culture? Why should a bee-journal take notice of this bad custom and sound a note of warning? Because, as far as honey is concerned, the waste constitutes a danger. Because if one-fifth, or even only a tenth, of the honey served upon the tables is thrown away, there is a chance in many instances of the bees getting at this honey second-hand and bringing to the hive, with it, undesirable bacteria. The very best honey may contain in it germs which, *absolutely harmless to human beings*, mean ruin to the brood.

Why are brood diseases almost permanent around many large cities, in this country, if it is not owing to the fact that some of the honey shipped from all parts of the country is, to a large extent, exposed where the bees can reach it?

One will say that, in most cases, the honey is healthy for the bees and entirely free of germs. True. But we know that in case of contamination, the microscopic germ which causes brood diseases is so small and so sparingly scattered in the honey that scientific examination has usually proven inadequate to find it. In other words, those germs of bacilli, which are *entirely harmless to man*, are so infrequent in contaminated honey that a microscopic examination usually fails to detect them. But they are situated in the most favorable condition for development in the stomach of the larvæ.

Aside from the dangers arising, through the wasting of honey and other foods, is it not time for our civilization to take notice of the wanton loss which has thus far been considered fashionable and proper?

We dare say that, our country through, from one-tenth to one-fifth of all the food served upon our tables finds its way to the dung heap, untasted. Think of wasting 10 to 20 percent of your food! How long would this amount support you in your old age?

This habit is not confined to the wealthy and well-to-do, but is noticeable even among the wage-workers, though in less degree. Neither is this of any benefit to the house-keeper, for she has to prepare so much more food, and after each meal has an ugly mess to clean up, made of a mixture of the neatest and finest morsels that she has artistically prepared. Aside from the high cost of living created by such an untidy habit, this alone ought to urge us to stop it.

Wisconsin and Iowa Going Forward

Mr. Frank C. Pellett writes us that a bill appropriating $1500 for bee inspection has passed both houses of the Iowa Legislature. The State Fair Association has also made a move forward by raising the amount of premiums on hive products 40 percent for the coming fair.

Mr. N. E. France writes that a new Wisconsin foul brood law has also been enacted. This places an annual sum of $2000 at the disposal of the State Inspector, who may appoint deputies. His salary is not to exceed $5 per day when actually engaged in inspection work.

The above-named gentlemen are understood by us to be inspectors for those States.

Moisture in Nectar

The statement made on page 92, that when first gathered nectar rarely contains more than 25 percent of moisture, and usually much less, is considered by some of our readers as incorrect. There appears to be more difference of opinion on this subject than on almost any other upon which the average bee-keeper cannot make a positive test. The United States pure food laws allow that amount of water in pure honey, and nectar in this and other countries is often found to contain 75 percent of moisture.

However, let us take notice that the amount of water in nectar depends, not only upon the kind of bloom from which this nectar is gathered, but upon the soil, the amount of moisture in the ground, and the hygrometric condition of the atmosphere at the time. Some scientific apiarists of the European continent, of the kind which one of our contemporaries calls "apiculteurs en chambre" (theoretical apiarists), have tried to give an exact figure as to the proportion of water in nectar. They might as well try to give an exact figure as to the proportion of water in the milk of cows. Our clover and basswood nectars contain very large amounts of water. Fall flowers contain less. Some of the crops of heather in Europe produce nectar so thick that it is extracted with difficulty. Perhaps, Mr. Isaac Hopkins, who wrote the statement criticized, lives in a very dry climate. This might explain his statement. It is safe to say, however, that in the majority of instances, honey freshly harvested contains much more than 25 percent of water. But to give a definite quantity as an average is an impossibility.

Here is a question on which we would like an answer: We are told that there is a considerable difference in the amount of water contained in different samples of nectar, and we know that some honeys are much thicker than others. Now is there any definite relation between the water in nectar in any particular case and the water in the honey derived from that same nectar? If A's bees gather nectar containing 20 percent more water than is contained in nectar gathered by B's bees, then will A's honey contain 20 percent more water than B's honey? Or, supposing white clover in each case, will evaporation continue until the honey is of the same density in each case?

Young Queens Destroying Queen Cells

In L'Apicoltore Moderno, Miss Fleischman criticises the statement made by J. Anderson in the British Bee Journal, that young queens, newly born, destroy other queen-cells. She has never seen this take place, although she has often watched them. We can, however, vouch for the correctness of Mr. Anderson's assertion. Young queens which have been confined to their cells by the bees are very lively, and when freed are exceedingly eager to destroy other queen-cells.

Be True

It never pays to misrepresent. If we are found in a misstatement of facts or a gilding of our goods by putting our best in sight and hiding the poorest behind, we are sure to be found out and to lose the good opinion of others as well as our own self-respect, which suffers even when our falsehood prevails.

The advertiser should place his offers in as good a light as possible, but he should "stick to the truth." The average bee-keeper does not seek "gold bricks." Fakes are usually distasteful to him. Straight goods and straight talk are what he wants and what he should give. We will all be the better for it.

What Should a Beginner Buy?

This question is asked by a novice in bee-culture.

We have always considered it possible and advisable to begin bee-culture on a very small scale. Perhaps it was because we began it with exceedingly limited means; perhaps also because at that time most of the modern implements had not yet been invented.

The most important and most valuable part of the outfit is the colony of bees. One ought to have two if possible, because if an accident happens to a single colony, one might experience failure and become permanently discouraged.

The novice should, therefore, begin with not less than two colonies, Italian bees, in good movable-frame hives. The quality is important. In addition to those, the only indispensable articles are: a veil, a bee-smoker, a hive-tool, some good beginner's book, and two or more empty hives, with an extra super for each and comb foundation. The quality of the articles aside from the hives and the bees, is of little moment. When the apiarist gets a little farther along, he will get better ones. The extractor, honey-knife, bee-escape, etc., will be needed later. If the man makes mistakes at first, as we all do, he will feel thankful that he has not been induced to invest largely. If he succeeds, as he will sooner or later if he perseveres, he will soon learn what he needs. Let the bees pay for it. The elder Dadant often said that after the first bees were secured by him, he never spent anything for them, in cash.

that was not already paid for by the bees in honey. Of course the labor was not reckoned in this because it was not a cash expense.

Glucose Again

A correspondent, in a friendly criticism, takes exception to our statement that glucose would be injurious to queens, in the candy for mailing cages. He says he has tried a small proportion, and that the queens did not suffer.

As the only advantage to be derived which is claimed by the supporters of this method is the greater softness of the candy, it is very clear that as long as we can make a sufficiently soft candy out of pure sugar, or sugar and good honey, this advantage is more fanciful than real. As to the cheapness of the article, it is well known that glucose does not contain half as much saccharine substance as honey does. At half the price it would be too dear. This has been proven in the making of grape clarets. The Concord grape does not contain sufficient sugar to make a lasting claret, and vintners use sugar added to the grape juice. Glucose was tried, because less expensive than good sugar, but it took twice as much to secure the same result, although some chemists who were evidently paid to make a favorable report, asserted that the glucose produced more alcohol than sugar.

Let us have only the best sugar and honey as feed, and we will have no cause for regret.

A Trip to Europe

Mr. and Mrs. C. P. Dadant will start for Europe at the end of this month, or as soon as the usual spring rush of activity lessens. This will not be altogether a pleasure trip. Mr. Dadant proposes to examine for himself the local differences in quality of the bees of Switzerland, Italy and Carniola. For years the Swiss bee-keepers have asserted that they find the Italian bees inferior to their own Swiss bees. It has also been asserted that the bees of Italy differ in different localities. These matters are worthy of investigation, especially at a time when the Italian bee is so much in the lime-light, owing to its greater immunity from European foul brood. Being acquainted on both continents, our editor will have great facilities to do this.

Communications to the American Bee Journal will be cared for in his absence by M. G. Dadant, the Manager. Urgent letters for C. P. Dadant himself should be addressed to him as follows: For July, in care of R. Gariel, 2 Ter, Quai de la Mégisserie, Paris; for August, in care of E. Bertrand, Nyon, Switzerland; for early September, in care of L'Apicoltore, 18 Via Cappuccio, Milan, Italy.

Breeding for Eggs

The Practical Farmer discourses upon a plan for getting an increased number of eggs from hens, and characterizes it as "the most important new wrinkle that has been brought out for a long time. Here's the "wrinkle:"

> Now and then a hen is found that will lay 250 eggs, and perhaps upwards, per year. We are likely to raise all the pullets we can get from her eggs, in the expectation that she will transmit her unusually great laying qualities to her daughters. In practice it is found that the pullets raised from her eggs may be quite indifferent, or at least very common layers. The

Mr. Frank Hinderer Came Very Near Losing His Bees When the Illinois River Overflowed this Spring.

female parent, in determining the laying qualities of a pullet, is not the only, and not even the dominant factor. The male parent seems to play the important and really decisive role. This has been brought out as a new fact by the most thorough and scientific investigations made by the Maine Experiment Station (a station that has done so much for the poultry keeper). In regard to the influence of good roosters, Dr. Raymond Pearl, of that station, says in Farm and Fireside: "How does a hen ever get to be high layer if she cannot inherit this quality from her mother? The answer is simple: The high-laying hen gets the excess-production factor, which is necessary to make it a great producer, from its sire.

"Here, too, is evidently the clue to the riddle which has puzzled so many who have trap-nested their flocks, when they find that some high-producing hens have good laying daughters, while other equally high producers have daughters that are poor layers. It all turns on the male used as the sire. Depending upon the hereditary constitution of the males used, it is to be expected that different proportions varying all the way from 100 percent to none, of the daughters of a high-producing hen will be themselves high producers. This is proved by experiments extending over a period of years, and involving a large number of birds. These results demonstrate the importance of getting the proper kind of males with respect to their hereditary constitution if one is to make permanent and definite progress in breeding for increased egg production.

"The aim is to get males that are 'pure-bred' in regard to the excess production factor. These can only come from high producing mothers bred with certain types of males. It is of the utmost importance in any scheme of breeding for production to select high-laying females, but it is not, as has been generally supposed, because their daughters will be good layers—this may or may not be the case—but rather because only from such mothers can males be obtained which will ultimately transmit to their daughters those qualities of high productiveness which are the goal sought."

No, the American Bee Journal has no notion of starting a poultry department, and the foregoing is not given with any such purpose in view. It is given because of its direct bearing upon the business of bee-keeping, and because it is believed that the importance of having the best of sires is just as imperative among bees as it is among fowls.

Thousands of queens are bought and introduced yearly for the sake of improvement in stock, but of all the bee-keepers who thus try to get better mothers for their bees, it is doubtful if 10 percent pay any attention to the sires, if indeed the number reaches one percent.

At once the reply will be made, "Oh, you can do nothing to control the mating of the queens." True, you can do nothing directly; indirectly you can do a great deal, especially in an apiary of any considerable size. While it is true that the queen must be left to chance, each bee-keeper should do what he can to increase his chances. Suppose in an apiary of 100 colonies 10 are of choice stock, and that no attention is paid to the drones. A young queen, upon her bridal trip, will stand one chance in 10 of meeting a choice drone. Suppose, however, that the bee-keeper keeps down all drones except in the 10 choice colonies, either by trapping, by shaving the heads off of drone-brood, or by allowing no drone-comb in the hives. In that case a young queen will have 10 chances in 10 of meeting a choice drone. In other words, she has 10 times as good a chance as when no attention is paid to the drones.

View of the Flood at Cincinnati—Notice the Big Honey Sign of the Muth Co.

Of course, drones from neighboring colonies may interfere very materially, but if the bee-keeper persists year after year in improving his own stock, his choice drones will constantly be meeting young queens from those neighboring colonies, making a gradual but constant improvement in surrounding stock.

It is pretty safe to venture the assertion that if bee-keepers of this country would take as much pains with their drones as they do with their queens, it would result in a million pounds increase in the amount of honey annually harvested. Like enough that is stating it mildly. C. C. M.

Now as to trapping drones, shaving off their heads when in capped brood, or allowing no drone comb, the choice between the three should be with the last method. Trapping drones is a nuisance at best. Shaving their heads is a dirty job. In both cases we have been to the expense of all that nursing and feeding which might have been bestowed upon worker-brood. Allowing no drone-comb, or only such as will rear a few hundred instead of the thousands which are generally bred, is the proper thing to do. But do not rely on simply removing the drone-comb. You must also replace it with worker-comb at once. Setting aside a few dry combs containing both worker and drone cells, you should use such parts of those combs as contain worker-cells, to fill the open spaces made by removing drone-combs from the brood-frames. This may be done at any time, but just before the harvest is the easiest time. If we wait until the combs are full of honey or the heat too great, it becomes an unpleasant job.

C. P. D.

Texas Inspection Law

The Texas State Entomologist, Mr. Wilmon Newell, writes us that in the passage of the inspection law, the emergency clause was stricken out, so that no inspection can be made before July in that State.

Swarming

If you would avoid excessive swarming remember the following points:

1. Have the hives well sheltered from the sun if possible from morning until night.
2. Give plenty of ventilation. Bees

should never cluster on the outside during a honey crop. They are either too crowded, too warm, or too little ventilated. It is sometimes well to raise the hive an inch or two from the bottom-board, especially in front.

3. Drones cause the bees annoyance by their bulk and their noise. Keep the drone-combs replaced by worker-combs wherever it is practicable to change them.

4. Have young queens. They lay less drone-eggs, and the bees are less apt to supersede them. When bees are rearing young queens to supersede the old mother, she is likely to swarm out and the bees will follow.

5. If you are raising extracted honey, keep a supply of empty combs ahead of need on the hive, if it takes three or four stories.

Veils and Gloves

The witty contribution in this issue on the above subject, by Mr. Bigelow, is intended for beginners. Very few practical apiarists use gloves at all, but we all recognize the need of a veil at hand for accidentally irritated colonies. We give our preference to the veil which is most readily put on or taken off, even if a little less safe than the well-fastened veil. Each one should decide this point for himself.

Do It In June

Keep the grass cut away from the front of the hives. Shade them from the hot sun. Do not allow the bees to cluster in front for want of ventilation or for want of room. If they hang out, raise the hive from its bottom, in front.

See that your colonies have enough room to store honey, when the yield is on. To coax an average colony into the empty super nothing is better than a few half sealed sections exchanged from a very active colony, and the latter won't miss them.

MISCELLANEOUS NEWS ITEMS

Dampening Sections by Means of a Wet Cloth.—If the sections make a creaking noise when being folded, it is a sign that they are too dry and need to be dampened.

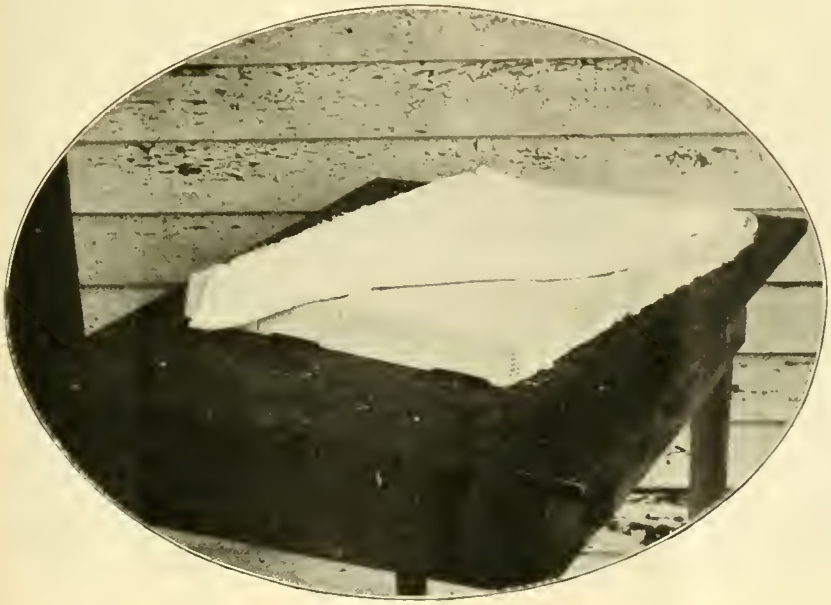
To dampen sections, take the sections out of the crate and lay them on edge on a table; take a white cloth (towel), soak it in water, wring out some of the water, leaving it very moist, and spread it over the sections, covering the three rows of V grooves as shown in the illustration.

Leave the sections covered in this manner until they are sufficiently dampened for folding.

Ordinarily the time required is only one hour. If the sections are very dry it may be necessary to soak the cloth twice or to apply it double.

The moisture, as it leaves the cloth, settles down into the V grooves just where it is wanted. This leaves the sections dry except the V grooves, and therefore the sections will not warp, nor will the dovetailing fit together too tight, as it usually does when the whole sections are dampened.

A good way to dampen sections in a hurry, is to lay them out flat on a table and then apply water in the V grooves with a small brush. Many sections should be laid out, side by side, at one time, having the V grooves in straight lines. To prevent the sections from getting wet from the drip, lay them on slats. Sections will answer this purpose.—Geo. A. Boyum.



Dampening Sections.

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Reinforcing Foundation.—B. Brewster, in the Canadian Bee Journal, page 48, speaks in high terms of his success in reinforcing foundation by painting melted wax over the surface with a flat 3-inch varnish brush. He does not merely paint over the upper part of the foundation (which secures against sagging), but paints over the whole of one side, the side upon which the wires are, thus fastening in the wires and reinforcing the foundation at one operation.

Last season gave the plan a severe test. Frames of foundation prepared as described were given at a time when bees were idle from dearth, and instead of chewing down the foundation as happens too often, the bees made good work, so far as they did anything, making beautiful combs of those that were fully occupied. A peculiar feature of the case was that "in nearly every case, 4 or 5 days after hiving, comb had been drawn out in every frame on the side that was painted, whilst little had been done where they had the 'Weed process' to work at."

◆

The Demand for Beeswax.—L'Apiculteur for January publishes a statement from J. De Hasque, of the Antwerp Commercial Counting House, who mentions the growing importation of beeswax into civilized countries from new regions, such as India, Abyssinia, Eastern Africa. He remarks that these comparatively new sources, joined to the modern discovery of paraffine and vegetable waxes which are now used in place of beeswax for many commercial purposes, ought to have lessened the price of beeswax.

On the contrary, the value of pure beeswax is now greater than ever. He ascribes it correctly to the increase of the movable-frame system of bee-culture, in which a minimum of beeswax is produced.

Not long ago, assertions were made that there would be profit in producing wax instead of honey. There will be plenty of room in the future for those who hold this view to try it themselves, for beeswax is more and more in demand, and there is no probability of a lower value. The active apiarist continues to reduce his production and increase his purchases of this article. This is natural, for success is in that direction.

Water in Honey.—Nectar contains 70 to 80 percent of water, and honey 18 to 25 percent. (In this country 25 percent of water is allowed in honey; in Germany only 22 percent.) Naturally, when bees are storing, there will be more water in the combs at the end of a day's work than there will be the next morning. So Ed. Knoke advises against taking off honey for extracting late in the day (Bienenwirtschaftliches Centralblatt, page 9), unless at a time when bees have not been gathering.

Alfalfa in Iowa.—"The Southwest Trail," Room 736, La Salle Station, Chicago, Ill., publishes a May number devoted entirely to the above-named subject. It is very interesting. The editor, V. L. Schoeffelmayer, well known to us for his energy and enterprise, offers this number, for the asking, to any one who will send his address.

Bees Need Enormous Amounts of Air.—In Bienen-Vater, page 61, are given some very interesting figures from Dr. Zander. At a temperature of 68 degrees Fahr., if we take as a standard the amount of air a man needs to breathe, in a given time, a number of frogs weighing as much as the man will need one-third as much air.

Lizards need 43 percent as much.
Dogs nearly 4 times as much.
Flies 21 times as much.
Bees 74 times as much.

Franz Richter, who reports this, figures out that a colony weighing 13 pounds will need, to support it one hour, the enormous quantity of 17½ cubic feet of air.

Let us figure a little farther, and suppose this 13-pound colony to be lodged in a 2-story 10-frame hive. Roughly figuring, these two stories will contain about 3½ cubic feet. After deducting the room occupied by frames, combs and bees, hardly half the room will be left for air; but call it that, 1¾ cubic feet. To supply the colony with 17½ cubic feet of air in an hour, the hive will have to be entirely emptied and filled ten times, or 240 times for each day. That would mean a pretty lively flow of air at the entrance, especially if that entrance should be, like some, less than half an inch deep.

To get another view of the lively breathing of bees, suppose a man weighing 150 pounds uses up as much air as 150 pounds of bees. Seal him up in a room 25 feet long, 20 feet wide, and 9½ feet high, and in 24 hours he will be dead from suffocation.

Note, however, that all this is at a temperature of 20 degrees centigrade, or 68 Fahr. Let the temperature be 45 or 50 degrees, or whatever that point is at which bees are almost nearly dormant, and the likelihood is that the bees can get along with less air than the man.

Iowa Appropriation.—The following letter from the Iowa inspector, Frank C. Pellett, of Atlantic, explains itself:

> Our appropriation is all right, and I must get busy. I met France and Kildow at Clinton last week to plan some way of dealing with foul brood where it exists on both sides of the river, as it now does adjoining both States.
>
> Possibly no summer meeting of Iowa bee-keepers will be held, as they are very busy, and it is hard to arrange a meeting entirely by correspondence. I will be glad to inform you as soon as the matter is entirely disposed of.
>
> Because one member of the Iowa association is having trouble from jealous persons poisoning and trapping his bees, the board has decided to employ an attorney to give free legal advice to members. We have accordingly selected Russell E. Ostrus, of Des Moines, who comes of a family of bee-keepers, and is in sympathy with the business as well as a good lawyer. We are not promising to pay expenses of litigation, although the association might vote to pay a part in a worthy case. I will be glad if you will call attention to this matter in your Journal.

Should Box-Hives Be Abolished?—As our readers already probably know, the foul brood laws of Australia prohibit the keeping of box-hives. There has been some opposition to this part of the law from unprogressive bee-keepers of the country, who claim that the box-hive is not a detriment. Mr. R. Beuhne, in an article in the Australasian Bee-Keeper, strikes right to the point, arguing in favor of the present law. We quote him as follows:

> What good will the abolition of the box-hive do? Will it prevent disease? So far as this State is concerned, where the box-hive has disappeared foul brood has either completely disappeared also or has become an insignificant factor.
>
> Never mind the bee-trees. I, for one, am willing to start and successfully run an apiary in any suitable locality and clean it of disease, too, in a few years, no matter how many bee-trees there are, so long as there are no box-hives to re-stock the trees with swarms and re-infect the wild bees by means of mashed diseased combs hung up in bags to drain, or thrown out for the bees from several square miles of country. A bee-tree, if left alone, is comparatively harmless; quite so when it is healthy. Even if the bees succumb to disease, it is not stirred up with a stick and scattered about; and in many instances mice, ants, and wax-moths reduce it to debris unattractive to bees before the latter find it. If some apiarist's bees do find it, it will be robbed out dry, and the apiarist will clean up the disease in his own hives. If he knows of suspicious trees he can plug up the entrance, clay it over, or nail wire-screen over the entrance, not to mention other methods, none of which he can apply to his neighbors' box-hives.

Dr. Miller on Honey Rules.—Glad to see Rauchfuss' article, page 163, but sorry he condemns the rules. It seems to me they are an effort in the right direction, there being at least something definite about them. But if Frank has something different that is better, by all means let him give it. He might also suggest rules for extracted honey. Would the Colorado rules be acceptable to the entire United States? Let us hear from him.

A Successful Iowa Bee-Keeper.—The high price of good land is causing many young men to look to the northwest or the south for an opportunity to begin life as their fathers did a half century ago. There are many now living in cities who look with longing eyes to the country, but for want of capital with which to engage in farming, feel that they must remain in an atmosphere that is uncongenial.

Such may find something of inspiration in the success of a well-known bee-keeper of Clarinda, who began the business without much capital, and as a side line in the beginning.

J. L. Strong was a carpenter and builder for many years, but becoming interested in bees, took up honey production in a small way to furnish honey for his table and profitable employment for his spare hours. As time went on, he found more and more interest in his bees, and began to study them in earnest, with a view of mastering the subject of honey production. As his apiary increased, he determined to give up his other business and devote his entire attention to bees. His friends tried to dissuade him without effect, for he was already a bee-keeper at heart, and nothing could prevent him from becoming so in fact.

In the beginning, he rented a house and lot in the outskirts of Clarinda. His bees did so well that he soon purchased the property, something that he had been unable to do in his former business. Mr. Strong has prospered since that time. Although there have been seasons when the honey crop has been short, other seasons have been sufficiently abundant to make up the shortage. He now has a comfortable home, has added other lots to his holdings, has built a modern extracting house and bee-cellar, has an electric power driven extractor to extract his honey, and everything else in accordance.

For a long series of years his bees have produced an average of 50 pounds of surplus honey per colony each year. In addition to his sales of honey, Mr. Strong rears thousands of fine Italian queens which are sent out to bee-keepers in every direction.

There is room for many such apiaries in Iowa. The young man who can see no other avenue open to him, may, if he is adapted to the work, soon have a business and a home of his own by beginning bee-keeping in a small way in connection with his present employment. A few bees can be kept almost anywhere, and can be increased as fast as the owner's ability or opportunity will permit.—*Greater Iowa.*

Attacked by Bees.—Very formidable is the concerted power of bees by the million. This is shown in the experience of a British expedition in Africa, for the party was attacked and routed, several of the pack donkeys being killed by bees.

The swarming foes were first encountered on a precipitous mountain, where they had doubtless dwelt and multiplied undisturbed for years, since the place was sacred to an evil spirit so dreaded by the tribesmen that they never ventured to visit it.

While resting in a shady spot the commanding officer and his party looked up to see a swarm of bees streaming in and out of a large crevice in the cliff. As the hole was close to one of the worst portions of the ascending ledge, strict silence was enjoined on all the men.

The Europeans in the party removed their boots in order to get a secure foothold, and the whole party crept quietly along the face of the precipice. But cautious though they were, there was sufficient noise to attract the attention of the suspicious bees. Soon an angry cloud swarmed out. A false step on the part of the men would have been fatal, but there was no time to think of their footing with the furious swarm at their heels.

Fortunately no one slipped, and the van of the expedition, scrambling frantically upward from their little enemies, safely reached the summit of the mountain, while those in the rear bolted downward in the opposite direction and awaited them below. But those on the mountain top had next to think of their return. Luckily for them, the domestic habits of bees are as orderly as their methods of harvesting and architecture, and the men had only to wait until after sunset, which is the bed hour of all bees, to slip quietly past unmolested, although, the task to which such a delay reluctantly forced them, of descending dangerous crags and pathless slopes in the dark, was more perilous than pleasant.

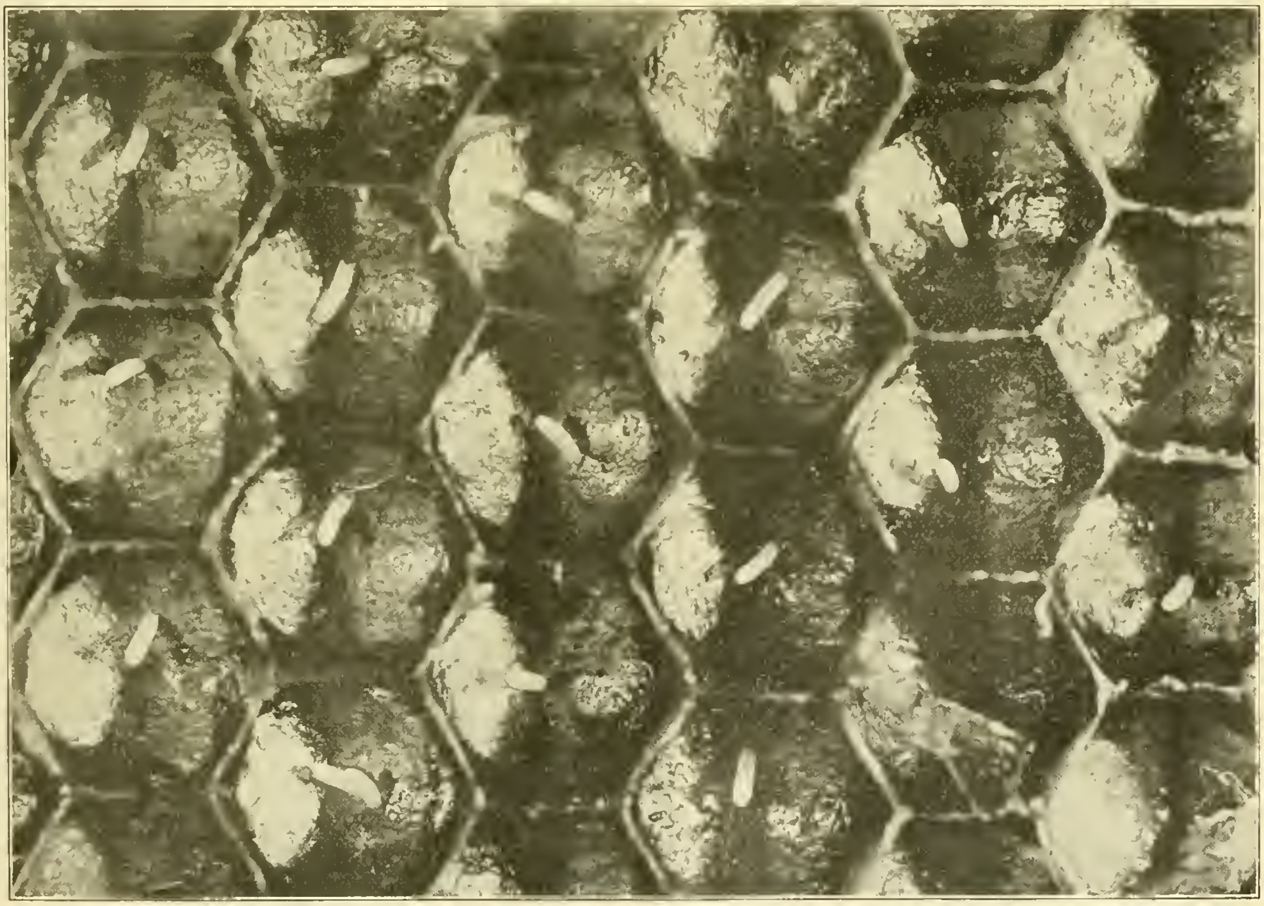
Far more tragic was an attack in a less dangerous spot, for in the sudden scattering of the caravan before the stinging hosts a sick man failed to make his escape, and was left behind. He was missed, and the commanding officer, with two natives, went back to search for him beneath the hollow tree where the bees had issued.

The party set to work quartering the ground near the tree. The bees swarmed down upon them, and it was impossible to avoid being stung. All the men could do was to keep the insects from their eyes. After a short time it became too hot for the rescue party, and they left. It was becoming too hot for the officer also, when he stumbled upon the native for whom they were searching, and picking him up he ran.

The unhappy man, who wore only a loin cloth, was frightfully stung. His body, owing to the innumerable stings left in it, instead of presenting a smooth surface of clear black skin, appeared to be covered with a close brown fur. He died in about 5 hours. —*Exchange.*

Propolis.—A new use of propolis is given by "Francois" in the Rucher Belge:

To fasten gold leaf in the decoration of walls, ceilings, mouldings, etc., they generally use a solution of gum-lac or fatty essence. This mixture has the inconvenience of not permitting the applying of the gold leaf until 24 hours after the mixture has been used. This inconvenience is great in the case of high ceilings, such as those of the Pal-



Remarkable Portrait of Eggs in the Bottoms of Cells.—(Photographed by Edward F. Bigelow.)

ace of Justice of Liege, the moving of high scaffolds being difficult and expensive. Besides, the greater or less desiccation of the coating has an effect upon the brightness of the gold, and the tones secured are never uniform.

To remedy these inconveniences, after numerous trials, I have secured a propolis mixture which has given me entire satisfaction. This mixture dries immediately, and enables the gold leaf to be applied at once. Its composition is as follows:

One hundred and fifty grammes of propolis (one-third pound) with 500 grammes (one and one-ninth pounds) of methylic alcohol (wood alcohol) in a wide mouth vial. To hasten the liquefaction, shake the mixture once or twice daily. At the end of a week, filter through cotton wadding.

The stability of gold leaf on this mixture is astonishing, and the possibility of applying both at the same moment reduces the labor about 60 percent. The mixture does not cause the wood to swell or lose its polish.—*Les Abeilles et Les Fruits.*

◆

Minnesota Appropriation for Apiculture.—Mr. P. J. Doll, president of the Minnesota State Bee-Keepers' Association, in a recent letter to this office, announces that the Legislature has enacted a bill providing for an appropriation of $3000 to be used for the purpose of establishing and maintaining an apiculture department at the Minnesota State University.

At a special meeting of the State Bee-Keepers' Association Dr. L. D. Leonard was recommended to the University authorities for the head of the department. Dr. Leonard has been an active member of the association and a bee-keeper for nearly 20 years. He is well educated, and excellently fitted for the position.

◆

Shakespeare on Hives.—Among old papers we find the following from Mr. John Phin, the author of "Phin's Dictionary of Bee Terms:"

"Shakespeare uses the word hive six times—mostly as referring to the dwelling."

"Drones hive not with me."
—*Merch. of Venice, II. 5.*

I, after him, do after him wish too,
Since I nor wax nor honey can bring home,
I quickly were dissolved from my hive,
To give some laborers room.
—*All's Well, I, 2.*

When like the bee, tolling from ever flower
The virtuous sweets,
Our thighs packed with wax, our mouths with honey
We bring it to the hive, and like the bees
Are murdered for our pains
—*2d K. Henry IV. IV. 4.*

So bees with smoke, and doves with noisome stench,
Are from their hives and houses driven away.
—*1st K. Henry VI. I. 5.*

The Commons like an angry hive of bees,
That want their leader, scatter up and down,
And care not who they sting in his revenge.
—*2d K. Henry VI. III. 2.*

When that the general is not like the hive,
To whom the foragers shall all repair,
What honey is expected?
—*Troilus. I. 3.*

Here is another:—(Ed.

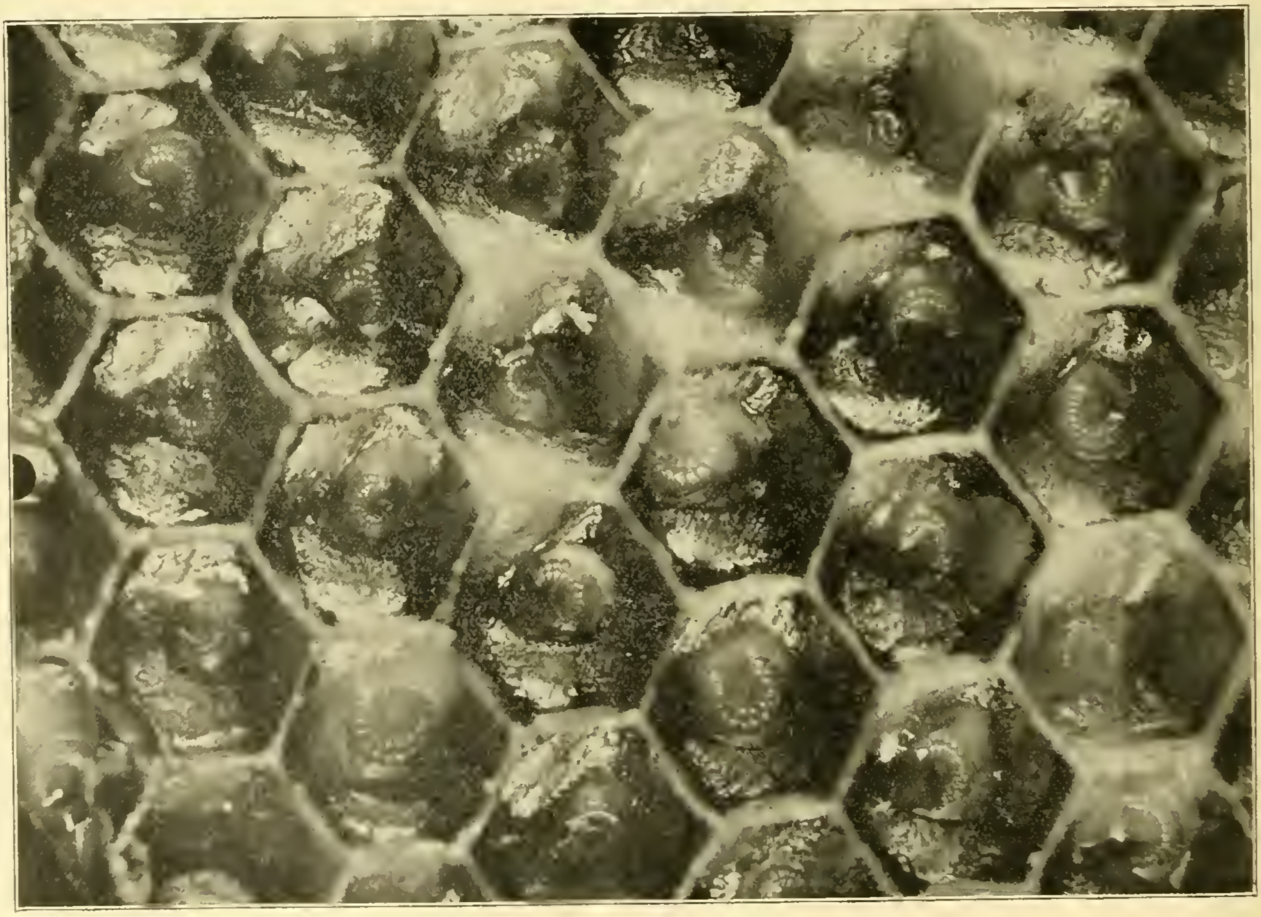
The old bees die, the young possess their hive.
—*Rape of Lucrece. 253d Stanza.*

◆

Honey in the Butter.—We read the statement in L'Apicoltore Moderno, that in some hotels of England and Switzerland, they mix 6 percent of honey with the table butter. They say that it gives a peculiarly pleasant flavor to the butter, and keeps it from becoming rancid.

◆

Inspection Appropriation for Illinois.—The appropriation committee of the Illinois Legislature reported favorably an appropriation of $2000 for Illinois inspection of apiaries. This is an increase of $500 over the previous appropriation. The faithful present inspector, A. L. Kildow, says that it did not take them more than "five min-



Enlarged Photograph of Larvæ in the Cells.—(Photographed by Edward F. Bigelow.)

utes" to decide that the appropriation was needed.

The bulletin containing the inspector's second annual report, and a lot of useful information, can be had for the asking of either A. L. Kildow, inspector, of Putnam; Jas. A. Stone, State Secretary, Rt. 4, Springfield; or Louis C. Dadant, Secretary of the Chicago-Northwestern, of Hamilton.

With France in Wisconsin, Ki'dow in Illinois, and Pellett in Iowa, there ought to be some educational work performed among the bee-keepers of those three States this summer.

◆

New Jersey Meeting.—A Field Meeting of the bee-keepers' association of New Jersey will be held on Wednesday, June 25, 1913, at the apiary of George Grover, near Trenton, N. J. We hope there will be a large attendance.

E. G. Carr, *Sec-Treas.*

BEE-KEEPING FOR WOMEN

Conducted by Miss Emma M. Wilson, Marengo, Ill.

A Large Comb

This colony of bees was in a corner of a house-wall. There were five sheets of comb; one was solid from top to bottom, 16 inches wide and 101 inches long. We took out 50 pounds of honey and left about 30 pounds for the bees. This was on Dec. 10, 1910, at Soquel, Santa Cruz Co., Calif.

(Mrs.) Bertha Anthony.

Oxnard, Calif.

Is not this one of the largest combs on record? To realize the length of it, let it be recalled that the ceilings of many dwelling rooms are only 8 feet high, and this comb is 5 inches more than that.

◆ ◆ ◆

For White Hands

It is the simplest thing in the world to make cosmetic gloves. All that is necessary is to make a pair of loose mittens out of woolen cloth and spread a good hand paste over the inside of them, after which cut off the mittens at the ends, as it will not do to exclude the air from the hands. An effective glove paste can be made thus: Put two ounces of yellow wax into a double boiler and heat until it dissolves, then add one ounce of powdered myrrh and beat thoroughly. Four ounces of honey should now be added to the mixture; finally, sufficient rose water is added to make a spreadable paste. This is quite the daintiest glove paste I know of.—*Chicago Record-Herald.*

◆ ◆ ◆

Seven Swarms in One Hive

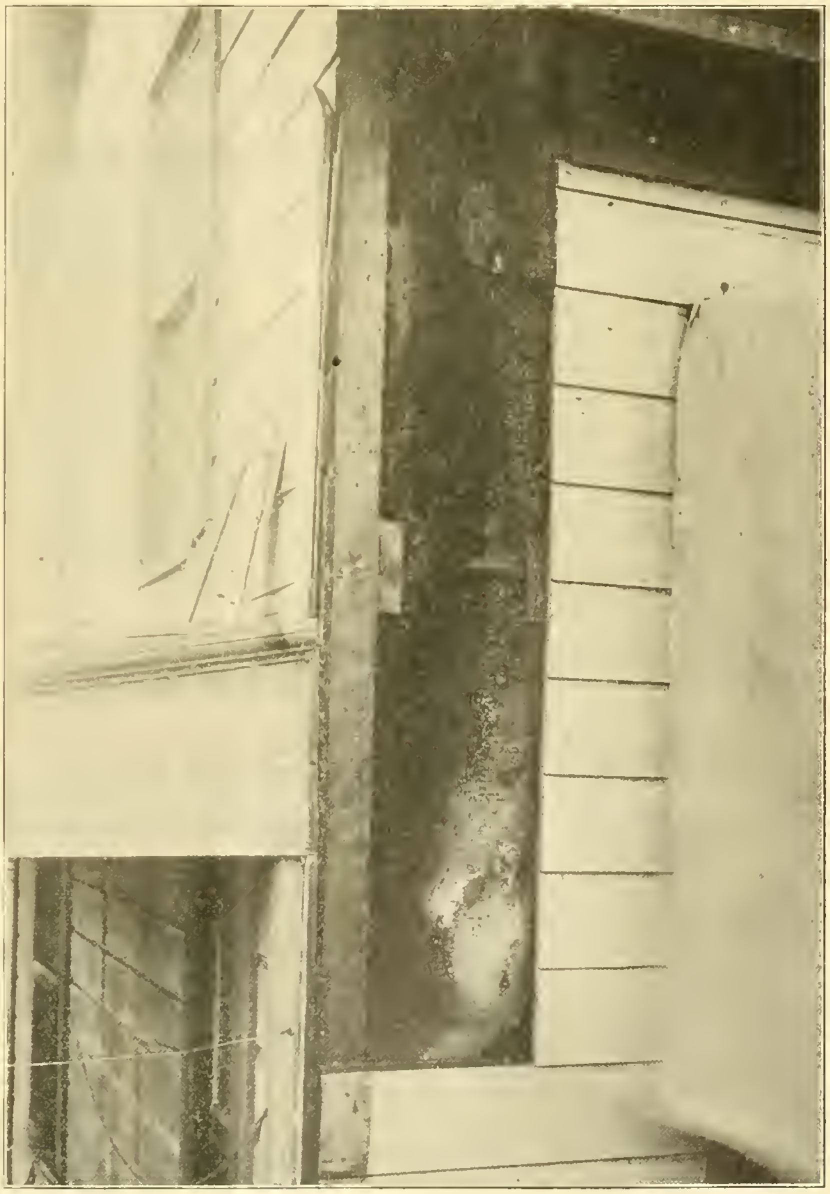
I want to tell you what I did with 8 swarms of bees that came out one day last August, when Mr. Banker had gone to town and I was alone with the bees. I was not very strong, but I could not see those bees go off if I could possibly help it, as they were all large swarms, so I got 7 hives and tiered them in one pile, hiving all the swarms together.

When my husband came home he said he never saw so many bees in a hive in his life. The next morning he went to look for combs. He got a lot of combs, extracted the honey from them, and when he went to shake the bees on the empty combs he found they had not killed the queens, as they had too much room. A large swarm went to the woods and the rest all took wing and settled on a plum tree. He carried 7 swarm-catchers full, and as he was tired of carrying bees he left the rest on the tree, but they all went to the hives through the day. I got 75 pounds of honey to spare, and left 40 pounds for winter. This is the most bees I ever hived in one day. We now have 150 colonies.

Mrs. Ina Banker.

Sleepy Eye, Minn.

You certainly had a unique experience. Others have had trouble with swarms uniting, but you deliberately united them. To be sure, others have united swarms, but it is doubtful that any case has been before reported in which so many as 8 were united. It is interesting to know that the queens



A Long Comb.

were not killed, and this was no doubt due, as you suggest, to the fact that so large an amount of room was given. It would seem to show that when two or more united swarms have sufficient room they have a tendency to divide into separate swarms. Some have advised, when it was desired to separate united swarms, to put twigs in the hives for them to cluster upon separately.

Some Honey Recipes

I have learned several new uses for honey. When baking apples, instead of using sugar, I pour over them extracted honey, allowing one tablespoonful to each large apple. In making fruit salad, I also use honey for sweetening. I substitute honey for the sugar in any cake or pudding where the yolk of the egg is used, also in fruit pies and sauces. When making gems and muffins, I pour in about a teaspoonful of honey; it sweetens without making a coarse grain or gritty taste.—*Good Housekeeping Magazine.*

A Cure for Asthma.—In a medical work I find it recorded that a doctor ate some ounces of honey every day for two years, and got entirely free of his asthma. Before this he had tried every known cure without securing any relief.

Hygeia Dressing.—Yolks of two eggs beaten stiff, juice of one lemon, two large spoonfuls of olive oil, two-thirds cup of whipped cream and two large spoonfuls of honey. Add a slight pinch of salt.—*Household Magazine.*

Paste for Bleaching Arms.—Milk white arms can be obtained by coating them at night with the following paste and allowing it to remain on until morning. To prevent bed clothes from being soiled, it would be well to wrap your arms around with long strips of cotton cloth: Myrrh, one ounce; honey, four ounces; yellow beeswax, two ounces; rosewater, one ounce.

Melt the wax in a double boiler, then add the myrrh, powdered, while hot; beat thoroughly together, then stir in the honey and rosewater and sufficient glycerine, drop by drop, to make a spreadable paste.—*Chicago Record-Herald.*

A British Bee-Keeping Sister

The British Bee Journal gives, from time to time, sketches of prominent bee-keepers, and in a late number the subject of the sketch is Miss M. Dagmar Sillar. The sketch opens by saying: "We believe this is the first occasion on which we have had the pleasure of presenting the portrait of a lady under the heading, "Prominent Bee-Keepers," and the subject of our sketch is well worthy of a place among them."

Born in London, of Scottish parentage, Miss Sillar first kept bees in North Wales, but her most valuable service to the cause of bee-keeping was in South Africa, where she was appointed poultry and bee expert at the Government Experimental Farm. A severe illness obliged her to return to England in 1912, after a very active South African career of eight years, and the likelihood is that British bee-keeping will profit by her activities hereafter, although Miss Sillar says of her African experience: "After all the hard work I wish I were going back to South Africa tomorrow."

Dandelions

In this part of the world it is counted that fruit-bloom has much to do with the honey harvest, not because a large amount of surplus honey is secured from fruit blossoms, for indeed no surplus is ever harvested from them here, but because they come at a time to do the most good in helping colonies to build up for the white-clover harvest. In late years, however, a strong competitor has grown up in the person of the dandelion. It is said to have made its first appearance here perhaps 70 years ago, when a lady brought the seed from the East because she thought it would seem more like home with dandelions about. Owners of lawns wish she had been satisfied with less homelike surroundings, but bee-keepers call her blessed. Even as late as 20 years ago dandelion nectar was a negligible quantity. Now it is abundant, increasing year by year.

In a certain sense, however, the dandelion can hardly be called a competitor of fruit-bloom. On this date, May 6, observation of thousands upon thousands of dandelion blossoms shows not a single bee upon them, while the bees are roaring upon the fruit-trees. Bees have their preferences, and while fruit-bloom is to be had dandelions are neglected. Only a few days ago bees were working busily on dandelions. But the nectar of fruit-blossoms was not on the market then. Like enough they will return to their first love a little later, when fruit-trees are out of bloom.

No doubt this explains, at least in some cases, why bee-keepers call a certain plant worthless for bees in one region, while in another region it is valued highly. In the region where it is neglected by the bees, it is neglected only because at the same time another plant is blooming which is a greater favorite with them.

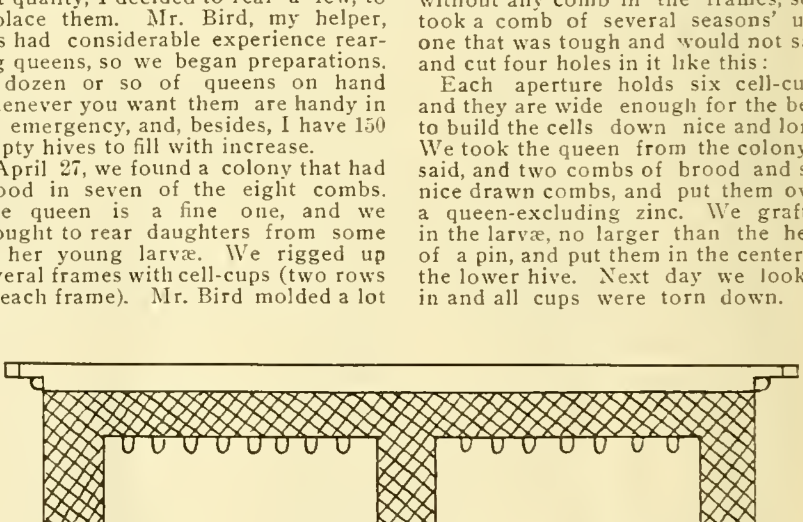
FAR WESTERN BEE-KEEPING

Conducted by Wesley Foster, Boulder, Colo.

Some Queen-Rearing Experiences

Having about 50 queens of indifferent quality, I decided to rear a few, to replace them. Mr. Bird, my helper, has had considerable experience rearing queens, so we began preparations. A dozen or so of queens on hand whenever you want them are handy in an emergency, and, besides, I have 150 empty hives to fill with increase.

April 27, we found a colony that had brood in seven of the eight combs. The queen is a fine one, and we thought to rear daughters from some of her young larvæ. We rigged up several frames with cell-cups (two rows to each frame). Mr. Bird molded a lot of cell-cups, *a la* Doolittle, and stuck them to the bars with a drop of wax. These cups looked lonesome to me without any comb in the frames, so I took a comb of several seasons' use, one that was tough and would not sag, and cut four holes in it like this:



A Frame Arranged for Queen-Rearing

Each aperture holds six cell-cups, and they are wide enough for the bees to build the cells down nice and long. We took the queen from the colony, I said, and two combs of brood and six nice drawn combs, and put them over a queen-excluding zinc. We grafted in the larvæ, no larger than the head of a pin, and put them in the center of the lower hive. Next day we looked in and all cups were torn down. So we took off the top hive with the queen, and placed it on another stand. Then we grafted another lot, put them in and also gave feed, sugar syrup that had been poured into a frame of comb. This started a little robbing, but in the evening of that day it turned cold, and the next day those cups were all torn down.

We next tried grafting cells into a queenless colony that was building cells, but they would have none of them. We are going to come back to our dequeened colony if the weather warms up and try again. Mr. Bird did the grafting. He selects some warm corner where the sun is shining brightly and no breeze stirs, and it seems warm enough to prevent the larvæ from becoming chilled.

We are going to keep at it until we succeed. It is possible that we have not fed enough, although the bees have been getting nectar from dandelion and fruit-bloom. Robbing is, however, attempted each afternoon, so that we shall feed regularly and try to get cells accepted. The changeable weather has been against us. We cannot rear queens during unfavorable weather. Although we have had no measure of success as yet, we are confident that we can rear queens when the right conditions are secured.

[The Doolittle method has often succeeded with the old queen in the upper story over an excluding-zinc. The weather is probably the cause of your ill success. It would be interesting to know how many of the extensive queen-breeders use the Doolittle artificial cell-cups.—Editor.]

The Efficiency Hive

Bees are going to be moved more in the future than they have been in the past. Carload rates on bees will be reduced, probably as low as live-stock rates. We need such system of management and arrangements that a car of bees can be loaded in a day, including all preparations.

When hauling bees on an automobile or wagon we should be able to load them as snugly as brick. The cover should be of the same size as the top and the bottom. The bottom and cover should be interchangeable. This is a simplification that is worth while. The cover must be tin roofed with an air-space over the honey-board.

The cover-bottom I have here shown will require but a trifle over 3 feet of lumber. The tin for the 8-frame hive size can be cut from regular roofing tin sheets 20x28 inches, two pieces from each sheet. The ⅞-inch strips are nailed on top of the tin, and hold it in place on three sides. When it is used as a bottom-board the tin is up and the wax and propolis can be easily scraped from it.

This cover-bottom requires a hive stand, as it reaches just to the front of the hive, and does not provide for an alighting-board. But in a way this is an advantage, as every hive should be placed on some good platform or stand to protect it from dampness.

A honey-board, as used with the Acme cover, is necessary unless one uses a blanket. The use of cloths over frames and sections is out of date and cannot be tolerated by the progressive bee-man. [We still use them, and would not do without them.—Editor.]

Projecting hand-holds are not to be used with the hive, as they take up room and interfere with piling in compact piles. The hand-holes are sufficient.

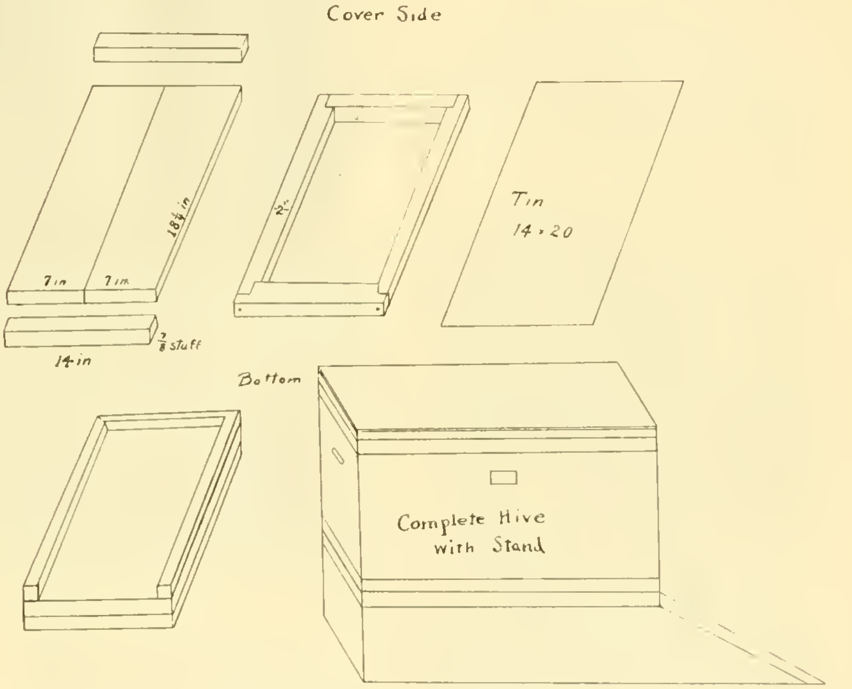
The advantages of this hive, using the standard dovetailed hive-body and frames, are that you save expense. It is the cheapest cover and bottom made. There is no waste lumber. When you want a cover, if a bottom is handy, you have a cover. The bane of the bee-man is complicated hive parts. I am trying to get this made so as to do away with the separate honey-board, and it will be practicable, I am sure.

The cover will be compact, and no projecting edges will catch the wind and blow off. Such a cover will hardly need a stone or brick.

The crack around the top edge of the hive can be seen, and robbing detected much sooner than when one has to get down and look under the cover to see whether bees are getting in. I can get these cover-bottoms, tin, nails, and all for an 8-frame hive for less than 20 cents each. Their cost, made from the best white pine, would probably not be over 25 cents.

There are 12 pieces in this cover-bottom, including the tin, and by a little better designing the number of pieces may be reduced to 10.

A shade-board might be necessary in some localities, and the lack of an alighting-board would be a very serious objection to some people. But the simplicity of the hive and parts appeals to me, and for those who do a great deal of moving it should prove of value.



Wesley Foster's Cover-Bottom.

SOUTHERN BEEDOM

Conducted by Louis H. Scholl, New Braunfels, Tex.

Increase and Out-Yards

Instead of making increase at an apiary and building up the nuclei with the intention of later moving the colonies up to a new place to establish an additional bee-yard, it is far better to do this all at one time. One of the greatest advantages is keeping the bees of the newly-made nuclei from returning to the parent colonies, and another is preventing the chance of these nuclei being robbed out, when left in the large apiary.

We use a shallow extracting super on all our colonies in the early spring for additional brood-rearing room and honey storage; this is also mentioned under the head of "Carniolan and Swarming," in this department. After these supers have served their purpose, and as soon as the bees of the colonies are well at work in the newly-given supers filled with foundation, which have been slipped in between the shallow-comb supers and the brood-nest on the coming of the honey-flow, the former are removed. Almost all of them will still have some brood in them which is sealed. Some will have a good deal while others may have very little or none. Therefore, it is advisable to change some of the combs so that all will have about an equal share of brood, as some nuclei might otherwise have too much brood to care for properly.

This done, these supers are set on as many new bottom-boards, a cover placed on each, the whole fastened together for moving, and the entrances closed with screen-wire entrance closers. A caged queen is given to each nucleus thus made. All are then loaded on a spring wagon and hauled to the new place, the entrances partly opened, and left alone for a week or more, according to the time the bee-keeper has to spare.

When these are nicely built up another super of combs is given, and you have that many divisible brood-chamber colonies in a new apiary.

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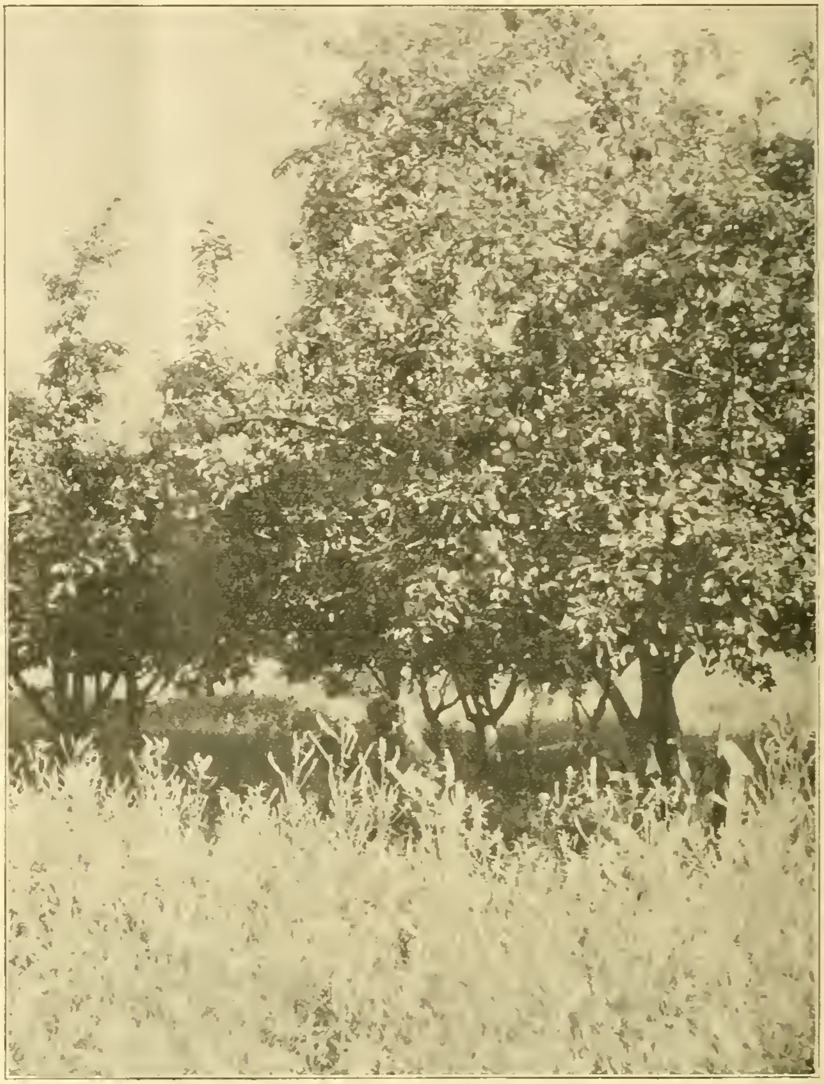
"Do It With Hired Help"

That suggestion of friend Wesley Foster, in the May issue, is of greater importance than many bee-keepers can comprehend. There are too many bee-keepers who do most of their work themselves, when they could have it done much cheaper and just as well. The writer remembers when he started out to have more of the general work done by others while he attended to the business side of bee-keeping; toward its expansion and the improvement of the methods of doing things with a minimum of labor and expense, and a maximum of profits. Some bee-keepers doubted the advisability of such a venture. They seemed to think that it paid better to do the work themselves and hire only such help as was actually needed when the bee-keeper could handle it all alone.

Such a method of bee-keeping enables one to enlarge the business to a far greater and more profitable extent than if an attempt is made to do it alone. More apiaries can be maintained. The bee-keeper should consider himself the business manager of his concern, planning his operations with a view of expanding to larger proportions. He should study out systems of management that will enable him to employ assistants as he needs them in the management of the business. Of course, not all bee-keepers have the ability to do such things on a large scale, but many bee-keepers may start slowly at first, and, with a little effort and study, learn how to increase the operations so that in time the business may be a large one.

If you will study any well regulated concern you will find that there are managers whose duty it is to look after the details, who study these matters with a view of perfecting their business systems and methods so that the most profitable ends may be reached. It is the man who uses more brain and less brawn nowadays that will reach the highest success. A man can do just so much work and no more, consequently his goal is soon reached, in the expansion of his apiary business, if the work is done without assistance. Far better it is to have more of the work done by others.



Sweet Clover is a Good Cover Crop in the Orchard; But Don't Let Arsenical Spray Fall Upon the Blooming Clover.

Carniolans and Swarming

We have tried Carniolans, and have found, after experimenting with them for a long time, that they are a valuable race, and that they can be kept from swarming as easily as any other race of bees with the proper management. The trait of excessive swarming has gone against this quiet, gentle race of profitable honey gatherers. Our experience has shown that they require larger hives than other races, and with the proper attention just before the danger of swarming, this trait becomes unnoticeable. The secret, therefore, is in having large hives and keeping them contented and busy.

We have since then adopted the same methods for all other races of bees, with the result that we have no trouble about swarming, although our apiaries number over 30 now.

It is no wonder to us that Carniolans swarm a good deal when kept in a single 8-frame Langstroth brood-chamber. Even a 10-frame Langstroth hive is too small for them. This is due to the prolificness of the queens, and as these breed up early, the above hives are soon crowded. These are exactly the conditions that mean the much-dreaded swarming, especially to the bee-keeper with out-yards.

We attempted to provide more room to the 10-frame hives by adding a shallow super of combs in early spring. This allowed additional breeding room besides furnishing storage room for honey that was gathered early in the spring beyond that used for brood-rearing. It also permitted the bees to move honey from the brood-combs below into these super combs. This left a less crowded condition of the brood-chamber, and the whole resulted in the production of rousing colonies of bees for the honey-flow.

There was still another trouble to overcome, however. As long as there was a chance for a congested brood-nest to develop, there was a likelihood of swarming. A colony of bees may swarm just as vehemently if clustered on the combs in an upper corner of a large dry-goods box, with plenty of empty space all about the colony, if the brood-nest is a solid mass of brood. The same condition existing in a smaller compartment would make matters still worse. What becomes necessary at this very moment is to break up that solid brood-nest, and if this is done in such a way that the queen may find new room for her egg laying, there will be no swarming, but a contented colony that will develop into a rousing honey-gathering colony. Such colonies are the ones that are desired by the bee-keeper.

Suggestions are offered for decreasing the swarming desire by giving, not only super room above, but also *below* the brood-chamber. While this may aid, it does not in seasons that are at all favorable to swarming. The reason for this is explained by comparison with a colony in a large dry-goods box, as mentioned above. As long as the brood-nest itself is left undisturbed the chances of swarming are just as great. Breaking up this solid mass of brood is the real secret, but it must be done before the swarming fever has developed. A colony already having the fever cannot be handled so easily. If it is too late, the best remedy is that of swarming the colony artificially by what has been known as "shook swarming."

CANADIAN BEEDOM~

Conducted by J. L. Byer, Mt. Joy, Ontario.

North Carolina

The picture of the apiary of Mr. Joseph Robinson, of Paint Gap, N. C., is of interest to me not because I ever saw the original, but because my father spent some time with Mr. Robinson the past winter. At least half the bees are in boxes and log "gums," but Mr. Robinson is rapidly transferring all into 10-frame Langstroth hives. My father helped him while there in April. The great majority of bees in the mountain sections of North Carolina are still kept in "gums," but the most practical men are gradually discarding them for the modern movable-frame hives. Mr. Robinson is in the mountainous section of North Carolina, not far from Mt. Mitchell, which is the highest peak east of the Rockies, if I am correct. He sent me a walking stick cut from the top of a small spruce that was growing on the summit of Mt. Mitchell, and while I hope it will be a long while before I need it, it is needless to say I value it very highly as a souvenir.

Mr. Robinson keeps pure Italians, and every year imports some queens from Italy. He is alive to the folly of using "gums," as he says that with the frame hives he averages three times as much honey as from the others. It seems strange, this being the case, that thousands of colonies are still kept in the old style. Judging by what my father tells me, the mountainous section of North Carolina is a bee-keepers' paradise, with much nectar-bearing flora.

Among the plants that yield honey are white clover, basswood, sourwood, poplar, locust, chestnut, and many other trees and shrubs. Bad roads are a drawback. About the most serious obstacle to the country, according to father, and for the warning of timid ones, is the rattlesnake. Other varieties of the "breed" are fairly common, although very little damage is done by these.

The bee-keepers of North Carolina have a heritage well worth developing. With the splendid climatic conditions, bee-keeping should be a business of pleasure and profit. Much work of the North is needless there, bees wintering well on the summer stands. In the summer season it is not necessary to provide shade, as in the mountains they do not have such extreme heat.

While speaking of apiaries in North Carolina, I am reminded that my thanks are due Mr. E. L. Horton, of Democrat, N. C., for 5 pounds of splendid comb honey sent me, the quality of which will equal anything I have seen in the North, and that is saying a great deal. Mr. Horton says it was gathered from the locust, a statement that surprised me. Here, what little honey we get from the locust, is very dark and rank; which goes to show that "locality" cuts a big figure in more ways than one.

Moving—400 Colonies in One Place

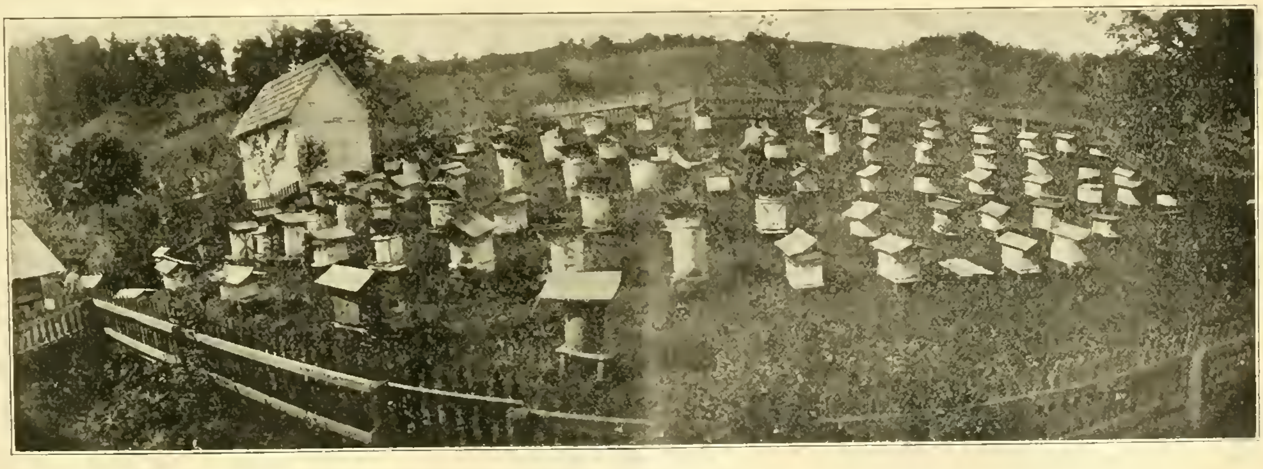
I expect to leave home on May 14 and move the bees from the New Dublin yard, which is 200 miles east of my home, to a location 100 miles from my home where I already have 120 colonies. Nearly 400 colonies in one location will be an experiment, and while I suspect it may be too many, yet the location is above the ordinary, and we will try it for one year anyway. As to the moving, I am not expecting a picnic. With 250 colonies and about 500 supers and other supplies, all to be moved 3 miles to a railway and 200 miles by railroad—well, it means some work, sure, and I will not dwell on the subject now for fear of getting discouraged when I am primed ready to leave in a few days. I will report later how the trip pans out.

An Early Fruit Bloom

The early part of April was cold, then about the 20th winter took an abrupt jump into summer, rushing everything along at an abnormal rate. The unusual spectacle of wild plum and apple trees in bloom at the same time is seen here this year, and at this date, May 9, we fear that frost may come and kill all this abnormally early bloom. Clover looks well and bees are strong, but unless clover is as early as was all other spring bloom, there will be a long dearth between fruit-bloom and clover.

Location for Out-Apiaries

In establishing out-apiaries, it is not always possible to get just the location desired, and often one has to put up with some inconveniences that cannot be avoided. The picture shows a corner of one of my apiaries, so nicely situated that there is always a tempta-



Note the Box-hives on One Side—Modern Hives On the Other—Apiary of Joe Robinson, of North Carolina.

Mr. Byer's Markham Apiary.

tion to lie down under the cedar trees on a hot day and enjoy the scenery instead of working. This apiary is situated in the town of Markham, but the location has no dwelling nearer than 250 yards, and trees are all around the yard. It is on a table-land about 80 feet above the valley and river. Behind this table-land the ground rises about 40 feet higher, so that the protection is splendid. About 30 feet to the left of the picture, a tiny stream trickles along, giving water for the bees, in a sheltered situation. The other picture shows the view looking south from the apiary, the two high bridges over the river being plainly in view.

This apiary always gives me the largest yield of all my bees, and the reason is not clear to me, as the other locations have much more clover around them. One factor that helps the yard, no doubt, is a large quantity of soft maples along the village streets just a short distance north of the yard. Shelter and water of easy access may also help some, especially the latter, as many colonies dwindle in early spring because of having to fly long distances for water on windy, chilly days.

Looking South from the Above Apiary.

BEE-KEEPING IN DIXIE

Conducted by J. J. Wilder, Cordele, Ga.

No Swarms

Mr. Wilder:—What is the matter with our bees? We have had no swarms this season, and almost none for several seasons, or since we "Caucasianized" our apiaries. The hives are boiling over with bees, and they have filled all the supers we have.

Arabi, Ga. J. F. Williamson.

Like many other bee-keepers, you are losing heavily each season through lack of supers. You should have not less than three supers per colony.

In many cases the Caucasian bees have proved almost non-swarmers; too much so for the average bee-keeper who wants to make increase by natural swarming. Artificial swarming should be resorted to, and good methods for this will be found in most of our bee-publications.

The Caucasians are not inclined to swarm. This solves a great problem with the extensive bee-keeper, for he does not have to watch swarms in his different yards. It suits us far better to make increase artificially.

◆

Too Much Swarming

Mr. Wilder:—I had 7 colonies of bees in the early spring. They have swarmed twice each, and are still swarming. I fear I will not get any honey this year. My bees are the common black or brown bees. Should I get better stock? J. A. King

Pitts, Ga.

The common race of bees has a few faults, and one is that they swarm too much. But little honey is produced in such seasons. This is not the worst of it. A lot of weak colonies will be on hand for winter, and winter losses will be large. You should watch them closely from now on, and feed and equalize stores as needed. As for better stock, I refer you to Mr. Williamson's letter in this department.

◆

A Beginner's Questions

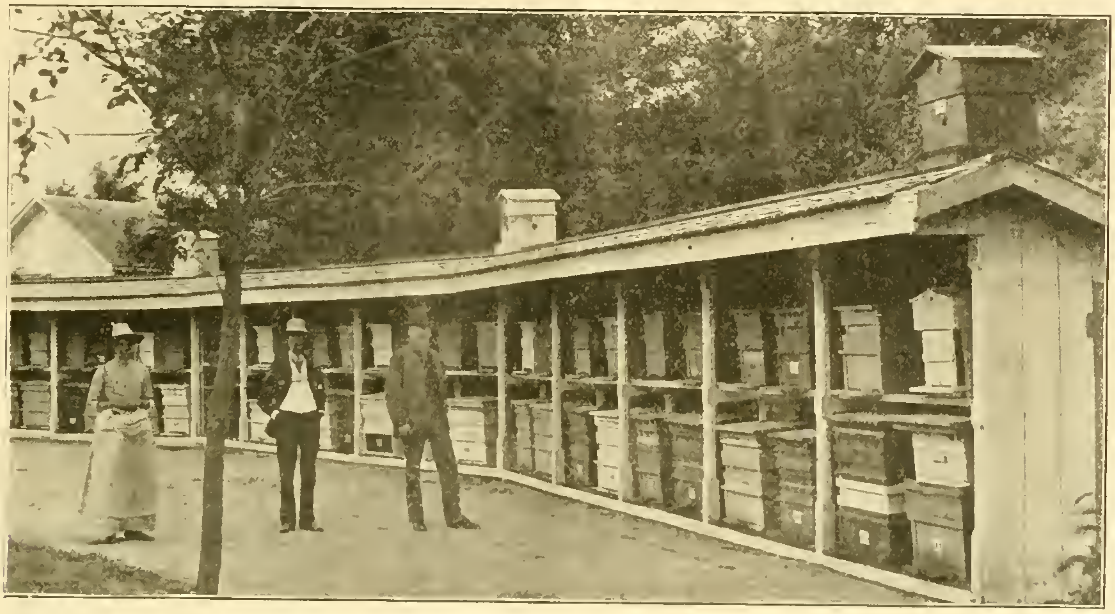
Dear Mr. Wilder:—Are honey-boards necessary when bees are run for chunk honey? When is the best time to transfer bees? How late in the season can bees be "robbed?" How can you keep worms from bees?

Milledgeville, Ga. A. S. Blanks.

Honey-boards as queen-excluders can be used to some advantage where bees are run for chunk honey exclusively. But if some strained or extracted honey is desired, to pack with the comb honey or to use separately, they are not necessary, as the comb that is soiled from rearing young bees may be removed and the honey extracted.

From April 15 to May 15 is the best time to transfer in spring, and from Aug. 15 to Sept. 15 in the fall. There will be a good honey-flow at that time from cotton. Bees that are in modern hives can be "robbed" any time. Sealed honey can be found in the supers, as they store their honey there.

The best way to keep the bee-moth from destroying the comb is not to keep too much comb in weak colonies. Hive-bodies can be placed on strong colonies, and some of the frames of comb from the weaker ones set in them. These may be given back as the bees build up and need them. It is best to



Decoy Hives on the Roof of the Apiary of the Late Wm. Stolley.

give them, instead of these, some combs of sealed brood, say one each week. They will soon be strong and will protect themselves from the moths, provided they have laying queens.

Do Bees Love or Hate Moths?

We keep a few empty hives at each apiary in readiness for natural swarms, and also for artificial swarms should we see fit to make them during our rounds. Never has a swarm taken possession of such a hive. But last season we had a number of swarms take possession of hives completely filled with bee-moths. The interior of the hives was lined with their cocoons, and on this account the hives were set apart from the rest of the apiary, and thought worthless. But the bees considered them good. This season we experienced the same thing, and we wonder whether the bees love or hate their foe, the moth. Or is it their instinct to go into quarters where they will have to spend considerable time cleanning up and getting ready for house-keeping?

[We suggest that the more or less conspicuous position of the empty hives has something to do with their adoption by the bees. The late Mr. Stolley, of Grand Island, Neb., a view of whose apiary is here reproduced, kept several empty hives, ready for swarms, on the roof of his bee-shed. He thus hived many stray swarms, and ascribed the success to the elevated and attractive position of the abode offered.

The strong smell emitted by a hive containing moths may also have attracted the attention of the scouts seeking a home.—Editor.]

A Great Season

So far this has been the greatest season we have ever experienced. This condition exists throughout Dixie. There has been a great increase made and a great harvest of honey well up to all expectations, and in most cases beyond. This means a great uplift for our industry. Naturally much optimism prevails.

CONTRIBUTED ARTICLES~

Value of Combs in Sections

BY G. M. DOOLITTLE.

I HAVE SOME questions sent in with the request that I answer them in the American Bee Journal. The questions are as follows:

1. When a flow of nectar comes on gradually, which would be best to use in the sections, starters of foundation, full sheets of it, or sections partly or entirely filled with drawn comb?

At the beginning of a honey-flow the bees are not fully prepared to take care of the nectar that comes in except in empty cells which may remain unoccupied in the brood-chamber. The reason is that it takes 2 or 3 days of extra flow of nectar above what is needed for brood-rearing purposes, for the bees which build comb to use enough of this nectar for the secretion of wax to produce comb wherein to store surplus honey. Therefore, empty comb enables the bees to store honey sooner than could be done were there no empty cells in the sections or elsewhere in the hive. For this reason drawn comb, or at least a few sections of it put in the first super as "baits," are a decided advantage.

If I could have my choice, however, I should be glad to have all the sections in the first super filled with drawn, or partly drawn combs. I have known several seasons which proved to me that a super of partly-drawn comb given each colony at the start meant just one more super of finished honey. A colony given a super of combs would have them filled and started on a second super of sections by the time the colony given foundation had made a start.

This difference is more noticeable with the dark or leather-colored Italians than with the golden Italians, hybrids or blacks. The dark Italians cling to the brood-nest where a super has no drawn comb in it, until actually forced out of it. If a bee emerges, and the queen does not stand ready to put an egg in the cell, it is quite likely to be filled with honey. Give such a colony a super filled with drawn or partly-drawn combs, and the bees will store honey in the combs about as readily as in the combs below, until a sufficient supply and long enough time has elapsed for them to be compelled to secrete wax, build comb, or draw foundation in the sections.

Bees rarely work at drawing out

foundation until sufficient honey is obtained to cause the comb-builders to secrete wax. Especially is this true with work done in the supers of sections. Hence, combs in the sections relieve the pressure upon the brood-nest. From this relief comes more brood, and this brood stimulates work in the sections and greater activity in the nectar-gathering field workers. It starts the bees to complete all partly-filled sections, or those having starters, or filled with foundation, or where only baits are used, thus bringing on a general storing above. Having made such a start, they are sure to continue it unless a sudden stoppage of the flow comes through a change in the weather.

Considering the value of drawn combs for this purpose, I have often wondered if some of us were not making a mistake in striving to have all sections, in which the bees had worked, fully completed at the end of the season; a few even going so far as to wish to "feed back" extracted honey for this purpose.

2. When the flow of nectar comes in with a rush, which of the three do you then consider the best?

From years of experience I know that there is no time in which drawn combs can be used to such good effect in this locality as at the rush that comes with the opening of the basswood harvest, when the bees that were one day almost living from "hand to mouth," came in the next day so loaded with nectar that they fell short of the hive before the sun was fairly shining in the tops of the trees. Under such circumstances nothing has been done by way of preparation for such a "downpour," and 3 or 4 days must elapse before sufficient wax can be secreted to build comb of any amount, or foundation be drawn so that this flood of nectar can be cared for. Here is where the workers for extracted honey, with their supers of ready combs, have the advantage over the comb-honey producers who depend only upon starters or full sheets of foundation in the sections.

The comb-honey producers could do nearly, if not quite, as well by the same means, having ready-drawn combs to store this first rush of nectar in without the delay of building new storehouses. Under such circumstances I once had a colony, fitted up for extracted honey, store 66 pounds in 3 days, while colonies quite as strong had only made a start in the section supers during the same time, further than filling the six sections given them as baits.

3. In using foundation in sections which is better, to fill the section full or to use only starters?

I began keeping bees several years before the advent of comb foundation, and we did not have comb of suitable whiteness to fill the honey-boxes. It was thought that starters of comb were good enough.

So when thin foundation for sections was proposed at $1.00 a pound, the most of us thought it too expensive to use more than a triangular piece, having a length of 2 inches on a side as a starter. But as the price lowered, most of our practical bee-keepers began to advocate full sheets, a little short at the bottom to save the "buckle" which often occurred in very hot weather by the sag or stretching when it was being drawn. It is best never to count the cost in producing a crop of honey except in connection with the profits. If, at the end of the season, the balance is on the right side of our book-keeping, it is best not to be afraid of the outlay. It always pays to spend money when the ledger shows that the more we spend the more we make. The question should be, "Will it pay?" instead of exclaiming, "It costs too much!" If it pays, use it. If its use is not attended with a profit, it should be left alone. Spend money, and spend it freely, when it will come back with a profit. If it doesn't, then it is folly to spend it.

Borodino, N. Y.

A Good California Law

BY A. J. COOK,

State Commissioner of Horticulture.

OUR LEGISLATURE has just passed, without any opposition, what I believe to be one of the best apiarian bills ever enacted by any State or country. The loss from black brood in California for the past year has been alarming, and as soon as the people of the State realized this, all opposition was drowned. This bill, which I enclose herein, appoints a commission consisting of the State Commisioner of Horticulture and the president and secretary of the bee-keepers' association of the State.

It is the duty of these gentlemen to appoint a State apiculturist, as those will see who read the bill. This man must be specially fitted to have charge of the work. This, I think, is a great point in favor of the bill. This apiculturist and the commissioners are to conduct examinations for inspectors, in order that no one will be appointed who has not passed an examination, and who is not well qualified for this important work.

In these bacterial diseases great caution and no little knowledge and training are required, else the disease may be scattered more than it is cured. Our law will now secure, by rigid examination, only fit men for this inspection work. Our horticultural law has this same good feature, and it has greatly improved the service of our horticultural inspectors. We expect the same of this new law. The State apiculturist, as he goes around, will instruct the several inspectors, giving advice and suggestions wherever needed.

Sacramento, Calif.

[The law in question is too lengthy (about 9 pages) for insertion in our columns. It creates a school of apiculture which every bee-inspector must attend for at least a week annually. The State apiarist, who is practically a chief inspector, receives a salary of $1800 per annum out of an appropriation of $5000, the balance of the amount being intended to defray expenses.

The State commissioners mentioned by Com. Cook in the above letter form a Board of Apicultural Examiners, who have power to recommend to the County Supervisors the appointment or suspension of any local inspector. They are to hold an annual meeting, without pay, for the examination of candidates for apiary inspection, and the date of their meeting is to be published in three bee journals. The compensation of apiary inspectors is fixed at $5.00 per diem and expenses.

Bees brought from another State, or from one county into another must be accompanied with a certificate of inspection, or must be examined at once upon their arrival.

If this law is properly enforced it should prove efficient. Its best feature, to our mind, is the educational part, which provides for a school of apiculture. Every one of our States will have to come to this.—EDITOR.]

Non-Swarming Strain of Bees, Swarm Control, Capturing a Swarm Under Difficulties, Etc.

BY G. C. GREINER.

WHENEVER the subject of breeding a non-swarming strain of bees has been spoken of in our bee-magazines, I have been wondering whether its advocates really meant what they said or whether they were really joking. I am not a scientist, but judging from a layman's standpoint, I would consider such a procedure an utter impossibility, being contrary to Nature's law. To succeed in that line, we would have to go back some 6000 years or more and countermand the All-wise Creator's command, installed at about that time, "Be fruitful and multiply." If this could be done it would have the same effect as to breed a strain of poultry that would lay unfertile eggs only; in either case it would mean the annihilation of the race.

The best we can do towards producing a non-swarming strain is to breed from some of our queens that show the least inclination to swarm. In this we may be successful in a measure, or we may not. For a generation or two we may have the satisfaction that these daughters inherit this much coveted

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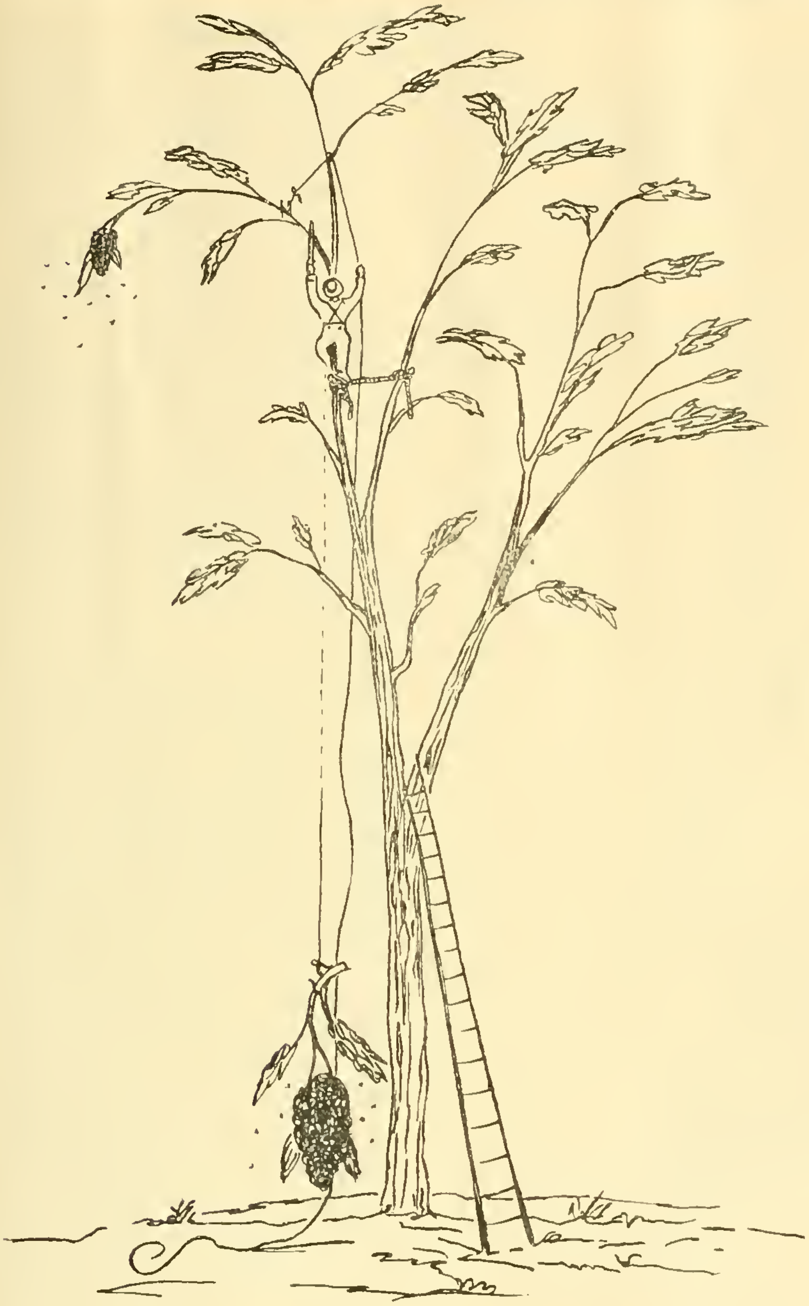

Fig 1.

FIG. 1.—LOWERING THE SWARM.

trait of their mothers. But there is nothing certain about it. They are likely to revert back to their more remote ancestors and swarm to beat the band. It all depends upon conditions which we cannot control.

Another way that gives us at least partially the benefit of a non-swarming strain is to control swarming by proper manipulation. I have just received Farmers' Bulletin No. 503; its subject is "Comb honey." To the comb-honey producer this bulletin is of special value; it would pay any bee-keeper, beginner as well as veteran of many years' experience, to send for a copy, if not already in possession of one. A fair portion of space is taken up in a comprehensive way with the subject of "Swarm Control by Manipulation." The various methods as practiced by our most advanced bee-keepers are given, and undoubtedly they are the most practical and in conformity with our knowledge up to the present time.

While the results of these manipulations may be very gratifying, there is one great drawback to nearly all of them. It takes too much time and labor to make them reasonably successful, and this at a time when the bee-keeper is bound hand and foot with driving apiary work. With the production of extracted honey it is very different. We can control swarming without any extra effort, and this is one of the great advantages derived from the production of honey in this form. If we keep close watch of all our colonies, make sure that they have empty combs at all times during a honey-flow, and this we must do to receive best results in the shape of surplus honey, we have, as a rule, practically no swarming.

As an additional safeguard against swarming, we should allow no old queens in the yard. In connection with supersedure, swarms are liable to issue, and as the introduction of young, vigorous queens is necessary to insure strong, healthy colonies we, at the same time, prevent so-called superseding by doing so.

During the last 10 or 12 years, the time I have practiced producing extracted honey almost exclusively, I have had less than 5 percent swarming under the management here outlined. I had prided myself on having mastered the swarming problem to a finish, but the past season surprised me in several ways. Contrary to all expectation, I can hardly give a plausible reason for it, from Aug. 21 to Sept. 4 about 30 percent of my bees cast swarms, some of them having young queens introduced in the spring.

It has been claimed that during a light but steady honey-flow, bees are more liable to swarm than during a heavy, rushing flow, or no flow at all. This last season seemed to prove this theory. From the first week of August until the end of October, we had just such a flow. Honey was coming in just fast enough to keep bees breeding, but none to store in supers, and, as a consequence, honey being used for brood-rearing as fast as gathered, hives were not as heavy with winter stores as usual.

The accompanying pencil drawing, Fig. 1, describes the feat of capturing a swarm under difficulties. When taking a general survey of the prevailing conditions, and trying to plan some feasible way of capturing the runaways, I was almost tempted, on account of the danger connected with the undertaking, to let them paddle their own canoe. But it happened to be the choice of my yard, the queen I intended to use as a breeder next year. Besides being uncommonly gentle and prolific, this swarm, one-half of a divided one, had given me 120 pounds of white clover, and between 50 and 60 pounds of dark honey during the season—all in all a very desirable acquisition to any yard, and worth the attempt to secure them.

When climbing the tree I found that the branch on which the swarm had clustered was too frail to support a person unless some re-enforcement could be made available. The rope, connecting the two main branches, answered this purpose, and at the same time furnished a support for the operator to stand on. From the drawing it will be seen that when the limb was cut with the left hand, the right hand had to manipulate the hook and line in such a way that the swarm reached its per-

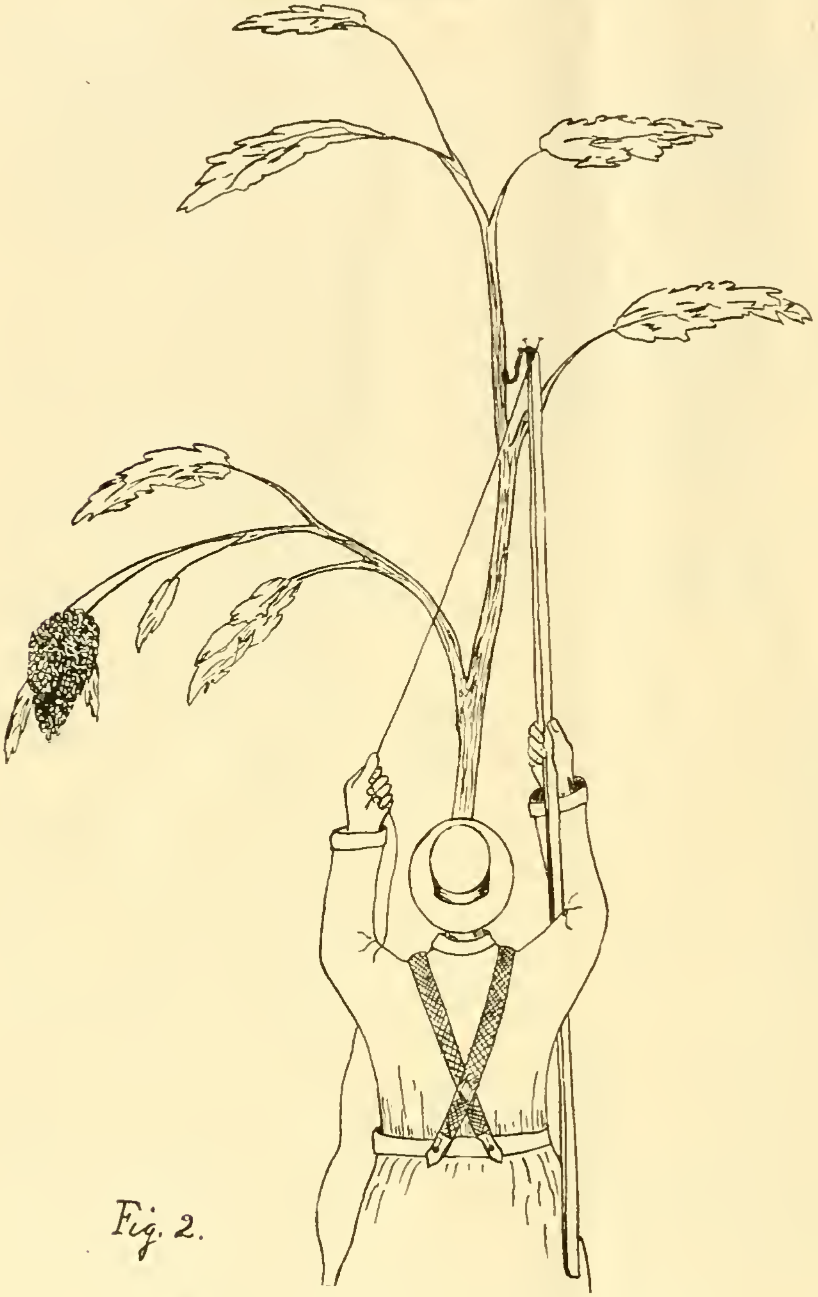

Fig. 2.

Fig. 2.—Manner of Fastening the Swarm Before Lowering.

pendicular position without jerk or jar, to keep the cluster intact as much as possible. This was no easy task to perform with one hand, but I succeeded admirably well, much better than I had expected. After the limb with the swarm had been disconnected and was suspended on the hook, I had both hands to manage the line on the gradual downward course of the swarm.

Figure 2 shows the manner of casting the hook and line over the little limb, that had to serve as a pulley when letting down the swarm. A similar operation was necessary to make the hook catch the limb on which the swarm was clustered. Neither trick would have required very much ingenuity if a person could have stood on the ground or on any other solid foundation, but 50 feet from the ground, standing on a springy rope with one leg, while the other is clasped around the tree as the only support in this dangerous position, it is a very different proposition.

At the foot of the tree is a fair representation of the swarm as it appeared after it reached the ground. The end of the line was fastened to the tree, while the operator descended and housed the bees.

A fair estimate of the height of the tree, the perilous undertaking, etc., can be gained from the fact that a 22-foot ladder had to be used to reach the first fork of the tree.

La Salle, N. Y.

Protection from Stings

BY EDWARD F. BIGELOW.

“BUT they will sting!” That is the insistent, persistent argument urged against honey-bees by the beginner. Did you ever try to be a missionary in popularizing honey-bees as a matter of natural history or of economic interest? Then you know how it is. Talk with all the power and enthusiasm that you possess of their habits, instincts, structure, parthenogenesis and metamorphosis, and interest follows you closely. Open eyes and open mouth, say “How interesting!”

Thus encouraged, to clinch the argument you tell of the ease in starting. A colony costs so little—how easily divided—nothing to do but to buy empty hives. You dilate on the extractor, you build an imaginary pile of luscious sections—so high—you get 20 cents a pound in open market, and 30, or even more, for choice home trade. You let your imagination loose, you soar aloft in the spirit of “blessed bees.” You outdo the man who borrowed a hen, hatched out 15 chickens, then from each when grown 215 chickens, then 3215, and then returned the borrowed hen (as if one would miss just one poor old grandmother hen out of a flock of 3215). So you surpass even the “blessed bee” man. You graphically picture a sunny, sloping field with woody, northern background, 500 “little happy hives,” out-apiaries, country estate, a beautiful pair of horses, and an automobile thrown in. Then your enthusiasm is suddenly annihilated, your Utopian picture obliterated by that one little convincing exclamation, almost petulantly given, “But they will sting!”

Let's “take the bull by the horns,” as I fancy that figure of speech easier and less painful than to “take the bee by its sting,” and frankly admit that they will.

Sting! Of course they will—sting, as an up country farmer who called to see my bees not long ago said, as he closed a thrilling story of the bees that got up his trousers' leg. “Sting! Gosh all hemlock! You ought to have *seen them* bees sting!” The man's diction would have been more stingingly effective if he had said, “*Felt* those bees sting.” However, his classic reference to the hemlock was happy, for when the bees got fairly waked up, they put in their poison as effectively as the hemlock tea put poison into Socrates.

But I am wandering from the thesis—bees will sting. Of course, with all

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rules there are exceptions, which, in this case, hardly except or prove anything.

First, there are the Caucasians, great honey gatherers, that do not sting much, at least on paper. Then there are the "gentle strains of Italians," most of which crawl delightfully calm and placid over the comb as you hold it up to the admiration of a friend.

"But they will sting!"

"Oh, no, they won't."

You open a hive with the Maeterlinckian "large, slow gestures," and you say, "See how easy it is. Not even gloves or veil needed." You show a super well packed, and you say, "Great honey gatherers these are; none better in my apiary." .

And all the time you are saying to yourself, "How they did sting when I opened the hive that rainy morning, hunted for the queen, found her, took out the frame and put it in an exhibition single-frame hive."

Or there was that day in late November, when you opened the hive to see if everything was right for the winter.

Sting! On both these memorable occasions, the thermometer said cool—but you know it was a lie—the hottest on record. It was a reminiscent day. It took you back to boyhood hours when you plowed up a yellow jackets' nest, and your trousers, your shirt, your face and your hands were speckled with crescentic yellow polka dots. The horses, you remember, left at once the plodding, prosy life of agricuture and entered the race course across the field, and you quickly decided to go in the same direction as an expression of sympathy.

Yes, any bees worth having will sting on occasion. And I'm mighty glad they will. What a lot of suffering, ill-kept apiaries there would be if we didn't have the sharp stings to punch out of the ranks those bee-keepers who don't really love bees. If it wasn't for the stings everybody would keep bees as they keep cats, and that would make you sick of honey.

So when this statement confronts you, "But they will sting!" don't dodge it. Just say, "Sting! of course they will." I wish they would sting ten times as bad. We then would have fewer bee-keepers who don't really appreciate these wonderful insects, and we would have less joy in overcoming the difficulties of bee-keeping.

When you handle bees without veil or gloves, it is like having your photograph taken—it is a special occasion—it doesn't show you as you ordinarily are, nor the bees either. And now let's make another confession, public opinion to the contrary notwithstanding. The experienced bee-man has nerves. even if he knows how to control them, and he can feel. Pain to him is pain, the same as to any one else. And he can cast no hypnotic spell, nor do the bees "know him" any better than they know any one else of similar temperament, disposition and apiarian knowledge.

So it is best to be frank at the first, and not to try to popularize bees on a false basis. Yes, bees can't sting, and they do sting, and they won't make an exception of you. Perhaps the bees of some colonies won't sting, but they will not be your favorites—that is among the Italian bees. And there are certain times and certain conditions of the hive when bees with careful handling will not sting; that is, not much. But if you are a faithful and enthusiastic bee-keeper you cannot limit all your handling to those particular innocuous periods. It is in the unfavorable times that you will need the best protection.

For a long time I have made a careful study of bee-veils and bee-gloves. How perfectly protected one's head looks in the illustration that advertises the veil! But most veils in actual practice fail to reach the ideal of the picture. The loose ones that slip over the hat won't work. The bottom must be firmly fastened down, as the bees will not make the attack horizontally. Some of them have an insidious, not to say familiar, manner of crawling up under the edges. Then as the apiarist bends in his work, the veil "flops" against the cheek or the nose, or especially the neck, and that is exactly the opportunity that the vindictive insect will not allow to pass unimproved. The Globe veil looks well, and the theory is right. The stiff bands are to hold the veil away from the face. And so they do. But they leave the neck unprotected. I have never felt that it is fair play to let the nose and the cheeks go free, and have a band of stings around the neck.

After much experience I have found the most satisfactory veil to be one that ties around the body, and may be pulled fairly taut so as to hold all parts away from the face. The hat brim must be really broad or the veil will not be held far enough away from one's features. To meet this objection I have made a "skeleton frame" of stiff yet light weight wire to slip over the hat. That holds all parts away from the face, and not the most active and ingenious bee can crawl up under it. It gives coolness, lightness, and absolute immunity from stings. In brief, it is the best that I have ever tried, and I have tried all that I ever heard of. It is the only one in which I am sure that I shall not get stung on the head.

On most questions pertaining to bees, I suppose that I shall be studying and investigating as long as I live. The rubber-glove question is an exception. So far as I am concerned, I have settled that for all times. Rubber is not the proper material. It is not a question of immunity nor non-immunity from stings. The vital point is preliminary to that, and is comparable to the famous recipe for cooking a hare—first catch him. With gloves the supreme points are:

1. Getting them on.
2. Wearing them.
3. Taking them off.

During warm weather rubber gloves on perspiring hands fail to meet these requirements. Protecting the hands from stings while at work with bees isn't much different in principle from protecting them from stains while weeding the garden, or from scratches when pulling up briers. The prime things are comfort and convenience. Rubber gloves afford neither.

The ideal glove should be of some woven fabric that will prevent the passage of stings. Long cotton gloves with an elastic band to bind them firmly around the arm just above the elbow have the right form. I wear them when stings are most to be expected. I am not in favor of oil-skin gloves. Plain *hard* cotton cloth is the best material. A secondary pair of gloves for special occasions, a cold or rainy day for instance, may be bought at most clothing stores for 10 cents. I have found it convenient to protect only the left hand, and use that for the dangerous work.

Such cotton gloves are not as good protectors when new as when they have been used a little; then propolis, comb, etc., give them a waxy-hard coating and filling through which stings will not pass. But in agreeableness this treatment of the gloves is much better than oiling. With such an equipment you can meet "But they will sting" by "No, they *can't* sting." I have worked for half a day at a time under unfavorable conditions, performing for certain colonies most meddlesome operations, but not a bee reached through to lance me.

Arcadia: Sound Beach, Conn.

Swiss Bee-Keeping

BY C. P. DADANT AND ED BERTRAND.

THE discussion which has taken place at different dates, in the American Bee Journal, between Mr. Getaz and our Swiss friends, may not seem useful to some of our readers. Yet it brings out two facts: First, the Italian bee, which is so much prized in the United States, and which has evidently proven better than the black race to fight European foul brood, does not maintain its reputation in Switzerland. Whether it is owing to a better grade of bees in the Swiss valleys, or whether the moist and cool climate of Switzerland is unsuitable for the Italian race, the testimony of our Swiss correspondents cannot be disputed. It is worth while to investigate this, for we have, on the Pacific coast, a number of regions where the climate is very similar to that of Switzerland.

Second, the Swiss bee-keepers are carrying on a desirable method, if it proves practical, that of keeping "mating stations" where only selected drones are permitted to exist. It remains to be seen whether it is possible to so isolate such stations that there

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will be no danger of matings with distant apiaries. These matters are worthy of investigation.

We must bear in mind that, in spite of our boasted advance in civilization, Switzerland is ahead of us in many things. It is the oldest republic in the world, and the most democratic. It has things in practice which we are only planning to try, the initiative and referendum, and government insurance. One of our statesmen, in opposing these reforms, asserted that Switzerland has less illiteracy than the United States, and is therefore better able to progress. So there is no disgrace in our investigating the Swiss ways.

The article of Dr. Brunnich, in the May number, page 167, was put in type early in the month, and a proof was sent to Mr. Bertrand, of Geneva, the former editor of the Revue Internationale, and author of the book, "Conduite Du Rucher" (Apiary Management), which has been translated into a greater number of languages than any other bee-book in existence. The cut of the Burki-Jeker hives, given on page 167, was taken from this work. Mr. Bertrand is of nearly the same age as our Dr. Miller, and has also a very thorough experience, acquired near Geneva. He uses the Dadant-Langstroth hanging-frame hive. We quote extracts from his reply:

"The Burki-Jeker hive, also called 'Schweizer stock,' was due to the improvements made by Father Jeker, a Catholic priest, former president of the Swiss Association. One of the merits of this hive is to be well suited for pavilions (house apiaries) with interior rooms in which the bees may be examined without causing robbing, since the colonies are thus protected from outside bees, and one is less often stung.

"In these closed rooms one has all the tools under the hand, and one may work in all kinds of weather. Moreover, the hives in a pavilion take much less space.

"However, these divers advantages are counterbalanced by less convenience in the visits. Pincers are required to remove the frames one after another, and they must be placed successively in a box at hand. To examine the frame which is the nearest to the entrance, it is necessary to remove all the others. But one becomes used to these maneuvers.

"My friend Jeker and I have often discussed the advantages and disadvantages of the Swiss hive as compared with the Dadant hive. He tried ours and appreciated it. I tried the Burki-Jeker hive at the Geneva Horticultural School, where I was professor of bee-culture for a long time.

"Our bees swarm but little, and I believe that the use of large hives, and the habit we have of enlarging the brood-nest gradually by adding already-built combs, has a tendency to diminish the issue of swarms. But in some seasons nothing prevents the swarming fever.

"Referring to the article of Dr. Brunnich, page 167, I agree with him on several points, but he is completely in error concerning the sources of honey and its quality, in Romanic (French) Switzerland. We prize especially our first crop honey, which is white as compared to the dark or second crop honey. It is mainly white honey which is produced here. The honey from the pines is considered by us as inferior, and is not an important source. Our principal crop is from sainfoin or esparcet, yielding the very best honey. The celebrated Gâtinais honey is sainfoin honey. We also have the dandelion—but in less quantity than in German-Switzerland — sage, fruit trees, locust (an uncertain crop), etc. We usually separate the two crops and keep them apart.

"On the Italian bees, I agree with Dr. Brunnich. I have noted here that, in the spring, the Italians fly out too early in the morning and that many are lost, especially in the mountains. Likewise they rear too much brood in the summer and fall.

"As to the black select queens reared by our German confederates, their methods are certainly judicious; but the results have not given queens superior to ours. At least those which our French Swiss have bought from time to time do not prove worthy of note. The average yield of our bees is superior to that of German-Switzerland, as statistics show.

"We have more hybrids in our apiaries than they have in German-Switzerland, for their leader, Kramer, has objected to the importation of bees, by the members, but our bees are none the worse for the mixture."

Geneva, Switzerland, April 25.

DR. MILLER'S ANSWERS

Send Questions either to the office of the American Bee Journal or direct to
Dr. C. C. Miller, Marengo, Ill.
He does not answer bee-keeping questions by mail.

Italians and Blacks

If one has common black bees and Italian-hybrids, how much more honey could you reasonably expect them to produce per colony after they were Italians by requeening?
Inquirer.

Answer.—I don't know. There may be a loss instead of a gain. Depends upon the kind of bees on hand and the kind introduced. I commenced with pure blacks, and the introduction of Italians likely increased my honey crops 25 to 50 percent. Then I increased perhaps as much again by constant selection and breeding from the best. But if I should now introduce an Italian queen into one of my best hybrid colonies, I would likely get less honey as a result At a rough guess, I should say that to introduce an Italian queen of best stock into an average black or hybrid colony would result in a gain of at least 25 percent.

Requeening—Value of Colonies

1. I have 2 colonies of black bees in box-hives. I should like to transfer them to modern 10-frame hives this spring. Is during fruit bloom the best time?

2. I would like to Italianize When would be the best time to do this? Could the new queens be introduced when the bees are put in their new hives? Could this be practiced on full sheets of foundation, wired?

3. How much is a colony of common black bees in a box-hive worth in the spring, summer, and fall?

4 How much is a colony of Italian bees in a modern hive worth, including super, sections, etc., in the spring, summer, or fall without the super?
New York.

Answers.—1. For years that was considered the best time, but nowadays many prefer to wait until the colony in the box-hive has swarmed. The swarm will be hived in a movable-frame hive, and then 21 days later, when all the worker-brood has hatched out the transferring will take place.

2. On some accounts in the fall, or at the close of the main honey-harvest, is as good time as any to introduce a new queen, as it is likely to interfere little with the working of the colony; but, of course, you will gain something in time by an earlier introduction. You can introduce her at the time of transferring, or you can take the time of swarming. You will be wise to use full sheets of foundation wired or splinted.

3. There is no rule about it, and it may vary anywhere from $1 to $5 or more.

4. Nor is there any hard and fast rule about this, although the variation may not be so great as with box-hives. It may be from $5 to $10 in spring, and $2 or $3 less in fall.

Shook Swarms—Bottom Starters

1. Is it a good plan to give shook swarms a frame of brood?

2. If queen-cells are started will they cause swarming?

3. Have bottom starters of foundation in brood-frames ever been used?

4 Has the queen the power to fertilize eggs or not?

5. Would transferring eggs from worker cells to drone-cells, or *vice versa*, prove it?
New York.

Answers.—1. Yes; it avoids the occasiona swarming out. The poorest frame of brood will answer.

2. I am not sure just what you mean, but there is always some likelihood of swarming when more than one queen-cell is in a hive, provided the colony is in condition to swarm and honey is yielding well.

3. I am not sure whether any one else has ever tried them, but I have. But I had no use for anything of the kind after I found I could use full sheets of foundation clear

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down to the bottom-bar by the aid of foundation splints.

4. Sure. She fertilizes all but the drone-eggs.

5. Yes, provided bees mature from the transferred eggs.

Sealed Covers—Re-stocking

I am a young bee-keeper. I had 7 colonies last fall, and put all of them under cover on the south side of a shop. I thought they would be good and strong in the spring, but when I set them out last week I found only 2 alive. These are good and strong. I had sealed covers on them, but they looked as if they had been pretty damp. They all had plenty of stores except one.

1. Do you think the dampness killed them? What plan would you suggest for me to take next winter?

2 I want to get more bees on the combs than I have now. Would it be best to order them by the pound from some of the southern States? Please advise me which is the best way to stock up, as I am very anxious to have a small apiary. ILLINOIS.

ANSWERS.—1. Likely the dampness had much to do with it. With only a single thickness of board for a cover, it would get quite cold, and the moisture from the bees would condense on it and fall in drops on the bees. To avoid this, have a super or some kind of a rim over the hive, and have this filled with rags, crumpled newspapers, planer shavings, or something of the kind; this filling resting on burlap which is directly over the frames. Even with the covers just as you had them, you could pile a lot of packing on top of the covers, and this would help a great deal, for it would make the sides of the hive colder than the cover, and the moisture would settle on the sides instead of on top. It would be a good plan for you to find within 10 or 20 miles experienced bee-keepers who winter successfully, and find how they winter.

2. That depends upon what you can buy them for near home. Find out what that is, and then compare with what they would cost from the South. If you find it better to buy near home, then you can use your empty hives for swarms.

Number of Frames in a Super—Miscellaneous Questions

1. How many frames would you advise putting in a 10-frame extracting-super in order to get nice, thick combs, using full sheets of foundation? I think it is easier to uncap thick combs. Will not bees build brace or bur combs if the extracting frames are too far apart?

2. Which would be the best way to put in screws on the bottom-board so you can get the best results out of the bottom-board when using hive-hooks, and arrange it so you can always have the bottom tight against the body so you can use an Alexander feeder underneath at the end of the hive, and so either side of ,the bottom-board could be used, leaving the feeder under the hive the whole season? Which are better, hive-hooks or hive-staples?

3. What kind of foundation is best to use in the extracting frames?

4. Will a virgin queen sting a person who is handling her? S. DAKOTA.

ANSWERS.—1. Either 9 or 8 frames will work well. No trouble with combs built between in either case. If only 8 frames are used, it will increase the space between combs only about $^1/_3$ inch, and bees will not start an extra comb in so small a space.

2. I have had almost no experience with hive-hooks, and a great deal with staples. The staples work well. Whether the hooks would work enough better to pay for the extra expense I don't know.

3. If you use shallow extracting-frames, you can use light brood foundation, only you must be careful about turning the extractor too fast while the combs are new. Indeed you can use light brood with full-depth frames if you turn the extractor slowly, extracting only a part of each side and then reversing.

4. No.

Advantage of Two Supers

How much of a disadvantage is there as to supers in comb-honey production, when from lack of numbers of same only one is on a hive, and that being full, the hive is without a super for say 2 or 3 hours, that it takes to empty the super and put in new sections? Two hours may seem long for that, but an account should be taken that there may be more than one hive to be relieved, and that one makes one thing of emptying all supers, cleaning and fitting and then replacing all. This compared with having two supers, so that while one is off the other remains on. So doing, of course, the colonies, for the few hours that the supers are re-organized, are out of work except in the brood-chambers.

PENNSYLVANIA.

ANSWER.—I have some doubt whether there would be any appreciable difference between putting on the empty super at the time of taking off the full one and a delay of 2 or 3 hours. During that delay the fielders would keep right on at work, only there would be a little congestion in the brood-chamber. But I would count *either* way wasteful; that is, I would count it wasteful to let a good colony have only one super at a time to work on. In the heart of a good harvest I would count it a poor colony in my apiary that would not be working on 48 to 72 sections at a time. Each colony will have 4 supers oftener than 3, and sometimes a colony will have as many as 7 supers at a time.

Cell-Protectors and Nurseries

1. In rearing queens, do you use cell-protectors? If so, give the plan. I am told by a bee-man that by using them I can hatch 6 to 10 in one nucleus, that the bees will feed them, and that I can then turn them out one at a time and remove as fast as they are mated. If you don't like that plan how would it do to hatch them, then put them in the queenless hives and nuclei to mate? Will not the queenless colonies accept them while virgins?

2. What kind of a cell-protector do you think is the best? How many days before hatching should they be put over the cells? KENTUCKY.

ANSWERS.—1. Let us be careful to discriminate between a queen-cell protector and a nursery. The West queen-cell protector protects all of the cell except the tip. The workers will not tear open the tip end of a queen-cell, but the protector does not hinder the young queen from emerging and running at large in the hive. On the other hand, no virgin can get out of a compartment of a nursery, nor can any bee get into it, except in the case of the Stanley nursery, which allows the passage of workers but not queens. I have never made much use of queen-cell protectors, and they cannot be used in the way you say, for any or all queens can get out of the protectors and kill each other. I have made a good deal of use of the Miller nursery, and a queen-nursery can be used in the way you mention, at least to a certain extent; that is, the virgins can be allowed to emerge from their cells, and you can remove them as you wish. But they cannot be mated, and must be removed and put in a nucleus or full colony to be mated. The workers cannot always be relied upon to feed the virgins in the nursery, but you can provide them with queen-candy. A queenless nucleus or colony will accept a virgin with proper precautions, but not always so readily as it will accept a laying queen.

2. I know of only one kind of cell-protector, the West, and I like the Miller nursery best, as might be supposed. The manner of use is very simple: The riper the cell is when confined the better, and I have sometimes put in the virgins after emerging from their cells. Of course the cells must be cut from the comb before being put in the nursery. A nursery is merely a convenience to hold the cells or virgins until they are wanted, and a virgin can be thus held 10 days or more, but the shorter the time the better.

A Good Location

How many colonies can I keep in one yard, and about how much comb or extracted honey could I get in one year, in this location, if my bees had good care?

I will name 10 of the most important honey-plants: Pussy willow, fruit blooms, raspberry, rock maple, vine maple, wild raspberry, wild blackberry, white and red clover, dandelion and fireweed. The fireweed lasts from the middle of July until frost, and the rock maple grows from 6 inches to 4 feet in diameter. It sounds like a swarm when the bees are working on the two. Besides these flowers I have named, there are 20 or more which the bees work on. Bee-pasture lasts from April 15 to the middle of September.

There were many wild bees here, and I have found as many as 11 swarms in one day; but now they are pretty well cleaned out.

WASHINGTON.

ANSWER.—That's a fine list of honey-plants, and if the white clover, wild raspberry are abundant, you ought to have no trouble in keeping 100 colonies and getting in a good year 100 pounds of comb honey or 150 of extracted per colony. But that is on the supposition that they have the best attention, and not merely attention at swarming time.

Questions About Queens

1. Is there any way to tell how good the queen is in a weak colony, during brood-rearing?

2. Is there any way to tell whether queen-cells are built for swarming or for superseding?

3. If a young queen is given to a colony in the spring, will swarming be retarded, and if so, to what extent? That is, how much more crowding will they stand, or the reverse? ARIZONA.

ANSWERS.—1. No. She may lay enough eggs to keep a weak colony supplied, but not enough for a strong colony. Yet even in a weak colony a very poor queen may not keep the cells filled with eggs in an orderly manner, but will skip more or less cells. Even in a strong colony you cannot tell how good a queen is merely by looking at her brood. The most prolific queen is not by any means always the best. To learn how good a queen is you must wait to see how much honey her bees will store compared with others.

2. No. But you can often make a good guess. If 10, 12, or more are started, it is a pretty safe guess that swarming is contemplated, especially if at the usual time for

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swarming. If only 2 or 3 are started, like enough it is a case of superseding.

3. If a queen that has been laying only a few days be given at the beginning of the swarming season, and if the colony has not yet made preparations for swarming, there is very little chance of swarming that season. The same is true to a greater or less extent if the young queen be given earlier. I am not sure about the *retarding*, but the chances for swarming are greatly lessened by the giving of a young queen. When you ask me to tell just how much crowding they will stand, you're crowding me in too tight a corner. Fact is, I don't know. I think something depends upon the queen, and perhaps still more on the bees. With some bees, a vigorous young queen could probably not be forced to swarm by any amount of crowding, provided the queen were not given too early, and from that it will shade all the way down to where allowing only room for 25 pounds of honey might induce swarming.

Queenless or Very Strong?

I have 8 colonies, but one seems to fly more than the rest. What is the reason? At times when there is not one bee flying from the 7, there are many flying from the one mentioned above. PENNSYLVANIA.

ANSWER.—I don't know. Sometimes a very strong colony flies more than others. It may be more excitable than the others. It may be excited by the loss of its queen.

Transferring—Choosing a Location

1. I am a beginner, having 2 colonies of bees in "box hives." Will you please give me the best way to transfer them to a movable-frame hive?

2. Do you think this (eastern North Carolina) is a good place for bees?

3. I wish to requeen my bees after transferring. Please give me a good plan for requeening.

4. Do you think it would be a good place to locate an apiary in a locality where there are about 300 acres of cotton planted each year, 400 acres of corn, 200 acres of peas, and 50 acres of tobacco; in which there are 50 colonies of bees in box-hives within 2 miles?

5. What size of hives do you think best for this part of the country, when running for comb honey? NORTH CAROLINA.

ANSWERS.—1. Wait until they swarm, hive the swarm in a movable-frame hive, set it on the old stand, and set the old hive beside it. A week later move the old hive to a new stand 6 feet or farther away. That will strengthen the colony in the new hive, and give you a good lot of surplus if there is surplus to be had. In 21 days from the time the swarm issued there will be no brood in the old hive except a little drone-brood, when you will break up the box-hive, fasten in frames any good straight worker-comb you may find, and fill up the new hive with frames filled with foundation.

2. From what I have heard I think it averages fairly well.

3. You probably mean to send off and get a queen by mail, and with that will come directions for introducing. The plan quite generally used is to remove the old queen as you receive the new one, put the cage in the hive between the frames of brood, and let the bees release the queen by eating through the candy. Sometimes the plan is to have the candy so covered that the bees cannot get at it for a day or two, which is considered a little safer than if the bees should release the queen too soon.

4. My guess should be that bees would do well there; but it is hard to make a safe guess with no greater knowledge. In some places cotton is a great honey-plant, and the same may be said of tobacco; but I don't know how it does in your locality.

5. Most likely the 10-frame.

How Many Colonies? What Kind of Bees, Hives, Etc.?

1. I desire to start in bee-keeping, and have had no experience in handling bees in movable-frame hives. I am at present employed in a railroad office as night telegraph operator, with hours from 1 o'clock a.m. to 10 a.m., and do not know how long I shall be located here. Which do you think would pay me better, to get only 1 or 2 colonies of a good strain or start with 10 or 20?

2. What kind of bees do you think are the best honey-gatherers?

3. Which hive do you recommend for a beginner, the Tri-State, Dovetailed, or Leahy telescope; also which size of frame, 8 or 10? I am located in northeast Missouri

4. Which do you recommend for a beginner, comb or extracted honey?

5. Which frame do you think is the better, the Hoffman or loose top staple-spaced frame, and which is the easiest to handle?

6. What frame do you use? Also what size section or extracting frame?

7. What do you think of hives made of yellow cypress or redwood? MISSOURI.

ANSWERS.—1. It is better to have two than one, but with no experience it is hardly wise to go beyond three.

2. Taken all in all, there is perhaps nothing better than Italians. A cross between Italians and blacks may do as well in the first generation, but they are more likely to run out than the pure Italians.

3. These all have the regular Langstroth frame, 17⅝x9⅛, the size to be recommended, and aside from this the particular form of the hive does not matter greatly. The dovetailed has the advantage that it is the one most generally in use. As to the number of frames, the 10-frame is decidedly better for a beginner, and like enough for the old stager as well.

4. For some, one may be best, for some, the other. For the greater number extracted is probably better.

5. Preferences differ. Some like the Hoffman, and others would not have it around because the bees glue the frames together making them harder to handle than the other kind of frames. With the metal spacers latterly used on the Hoffman, it is not so objectionable.

6. I use the Miller frame, which is a plain Langstroth frame with common galvanized shingle nails for side-spacers and small staples for end-spacers. I use the same for an extracting-frame, although if I were going extensively into extracting I would likely have a shallower frame. I use the section most generally in use, 2-bee-way 4¼x4¼x1⅞.

7. I have had no experience with them, but from what I have read I suppose they are good.

Supersedure—Rearing Queens

1. I have noticed you said, on one occasion, that you left supersedure to the bees. In that case, you could probably tell me the percentage of queens that live 3 years; also 4 years, and 5, if any?

2. I propose rearing a few queens this season from an imported queen (Italian), as I find it a very slow process Italianizing an apiary of 60 or 70 colonies by the purchase of five or six dollar queens each year. I can have a location 4 miles from home, and 2½ miles from any bees. Now what outfit would I require to rear say 25 queens and have them mated in that yard? Would you take 2 colonies, one for drones and one for cells?

3. The horizontal method appeals to me as being more simple than any other that I have read of. What do you think of it?

4. Would a 2-frame nucleus be large enough; say 4 of these in a 10-frame hive properly divided? Would you make these nuclei at home, and then haul them to the queen-rearing yard?

5. With drones in all the hives, more or less, as in the swarming season, how would you dispose of them? I have your "Forty Years Among the Bees," but you do not seem to have had this mating question to deal with. MANITOBA.

ANSWERS.—1. It would take the figuring up of a number of years to find such an average. I have just looked up the year 1912, and find that the year opened up with 31 percent of the queens from the previous year, 64 percent of the two years previous, and 5 percent of three years. Another year might give quite a different story, as also might, and almost certainly would, a series of 10 or 20 years. For surely it will not prove the rule that there will be twice as many 2-year-old queens as 1-year-olds. Why that happened to be so in 1912 I do not know. Neither will it generally happen that there are no 4-year-olds, although 5-year-olds are very rare.

2. No great outfit is needed. All that is essential is to have the 25 nuclei and a colony with drones, unless, indeed, you do without the latter colony and manage to have the drones in your nuclei. No need to take the colony with your best queen. Let her stay at home, and merely take cells of her stock with the nuclei. I take it that you will use your regular brood-frames of full size, so the only special thing needed is the nucleus-hives, and you can do without them if you use a full hive for each nucleus.

3. I am not certain I know what you mean by the horizontal method, unless you mean several nuclei on the same level in a hive, and that certainly is good. Yet as a matter of convenience, of late years I have generally used a full hive for each nucleus. You have the advantage of mutual heat when you have several nuclei in one hive, yet in hot weather that does not make so much difference.

4. Yes, a 2-frame nucleus answers well. I wouldn't form the nuclei at home; merely prepare for them at home. That is the chief beauty of hauling the bees off to a distance of 3 or 4 miles; you can divide them up as you like, and they will stay where they are put without precautions. In a 10-frame hive you can manage to have 10 frames, each well filled with brood and well stocked with bees. After they have stood queenless in the home apiary perhaps two days, staple on each comb, centrally, a queen-cell. A day or two later take this hive to the out-apiary, and put one of the frames wherever you want a nucleus. At the same time you will take along another hiveful of brood and bees (that have been queenless for two or three days), and of these given to each nucleus will complete the nuclei, unless you wish to add a frame with some honey. Lay your plans so that by no chance shall any virgin emerge from its cell before being in its nucleus. The sooner it emerges after that the better.

5. A drone-trap at the entrance of the hives prepared for the out-apiary will dis-

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pose of the drones, so that you will take none there except in the one hive.

A Difficult Swarm—Old Queens—Placing Frames

1. What is a good way to hive a large swarm of bees from a bee-tree? The small entrance is about 20 feet from the ground, and the tree is much too valuable to be cut.

2. In requeening how can I keep the old queen in good condition for several weeks until I find out whether or not I shall need her?

3. Can large brood-frames be interchanged successfully with shallow extracting frames which were also used as brood-frames? Will it make any difference to the bees if the large frames do not *quite hang*, but only set in the brood-chamber? I am trying to use a number of deep supers as bodies; they measure exactly the same depth, but the frames of the regular bodies are just a little too tall to hang in them.

4. In hiving a swarm where only the queen and not quite two frames of bees can be captured, should the division-board be used as in nuclei, and about how many frames of comb or foundation should be given them?

KENTUCKY.

ANSWERS.—1. Your question puts me very much where those bees are—"up a tree." I have some doubt whether there is any way by which you can get those bees into a hive—provided the tree is not to be cut—without costing more trouble and labor than the bees are worth. Possibly you might smoke 'em out, if you can in some way secure footing enough to operate so high up in the air. The first thing is to decide as nearly as you can where the colony is located with reference to the entrance, for I take it from what you say that there is only one entrance. That may be at the top of the cavity, at the bottom, or somewhere between. With your ear against the tree, listen to the noise of the bees when you pound upon the tree, and you may be able to locate them. If the entrance be at the top, or near the top, then make another hole at the bottom; otherwise make a hole at the top of the cavity. Then into the lower of the two holes send something whose odor will drive the bees out of the upper hole, carbolic acid, tobacco smoke, etc. Even ordinary wood-smoke from a smoker may suffice if persisted in. As soon as the bees are out, plug the holes so they cannot return, and then treat them as a swarm.

2. The best way is to keep her in a nucleus of one or two frames. You may be able to keep her in a queen-cage provisioned with queen-candy, especially if you put a dozen of workers with her, and keep her in a warm place.

3. If I undestand you, the bottom-bars of the frames will rest on the hive-floor. That will be all right except for the annoyance that the bottom-bars will be glued to the floor. For a temporary thing it will do, but hardly for a permanency.

4. A division-board is not needed, but it is better to have a dummy; that is a board like a division-board, but having a space all around. The hive may be filled at first with combs, or you may give only one comb more than the bees can cover, adding others as they are needed.

Keeping Down Increase

I desire to keep down increase and rear new queens every year, and as I am busy I want to do this the simplest and easiest way possible.

1. How would this do? When a swarm comes out, hive it in a new hive on the old stand, put a queen-excluder over the entrance so as to get the old queen, kill her, then set the section of hive containing the brood and queen-cells on top of the new hive containing the swarm, and the super also, if there was one on the hive, placing the other section of brood on some weak colony? After shaking the bees out in front of the parent colony, would not this give a new queen, keep down increase, and give a good crop of honey? We would cut out all of the cells but one, or would that be necessary?

2. Just before the clover bloom comes, or before the bees show signs of swarming, say two weeks before the main honey-flow, how would it do to take one or two frames of brood and young larvæ, six full sheets of foundation, put them in a half brood-body, and set this on a section of empty combs; set this on the old stand, shaking part of the bees from the old frames; then set the old hive, queen and all near by on a new stand, and in 4 or 5 days put a super of full starters on the queenless part, and after the flow is over unite them? Would the new queen kill the old one, so that we would have a new queen in each colony so treated *without ever having to look up the old queen?* I don't like to hunt for queens. I had settled on the Chapman plan of taking the old queen away, but that means you will have to find her first, which is a job in full colonies. I have tried every plan given, and I believe to just look over one frame at a time is as good as any.

SUBSCRIBER.

ANSWERS.—1. Yes, this would work well. You would have to cut out all cells but one, else the first virgin out of her cell would be likely to issue with a swarm. Instead of that, it would be a little better if you would wait until you hear the young queen piping in the evening (this would be a week or more after the issuing of the swarm), and then the next morning kill *all* queen-cells. This would be a little surer to give you a good queen than to kill all cells but one, for the cell left might not be the best, and in rare cases might even contain a dead larva.

2. I don't believe you would like this. You would hardly get the very best queens in this way. For one thing, queens reared so early are likely to be poor. Then you are not certain which part would be queenless, and if it should happen to be the one set on a new stand, it would likely be too weak and discouraged to rear a good queen. If the queenless part were left on the old stand, a swarm would too often issue with the first young queen.

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REPORTS AND EXPERIENCES

The Season of 1912

In order to give a true picture, we must go back to the fall of 1911, which was about the most discouraging fall I ever saw as far as bee-keeping is concerned We had nothing but rain and cold weather all through August, September, and part of October, and by the middle of November considerable snow which stayed until spring, consequently the queens stopped laying in September. This, coupled with the fact that during August considerable honey-dew was gathered, and that for weeks the thermometer never went higher than 30 degrees above zero, is it any wonder that the majority of our bees died?

Had we bee-keepers been smart enough to take away all the honey and feed sugar syrup, we could have saved our bees, but as the honey-dew was not of a very dark color, and did not taste bad, no one had any idea it would be so detrimental to the bees. The majority of bee-keepers lost nearly all their bees, many of them every colony they had. When my 46 colonies were taken out of the cellar (March 21) they were all alive but one, but on examining them the next day, I knew that half of them would not pull through. In many hives I found but a small handful of bees and right here let me say that if we bee-keepers of the North could have sent to the South for bees by the pound, we could have saved most of those colonies). The hives were spotted so that not even the numbers could be read, and the odor was fearful.

By uniting the number of my colonies was reduced to 26. They were then well protected with tar paper, and as we had very nice weather for about two weeks, I fed thin sugar syrup, and also pollen, in a warm, sheltered place. The pollen was corn meal, oat meal, rye and graham meal mixed. If there had been a natural flow those bees could not have worked better. The queens started to lay at once, and though the spring was cold and backward, they kept laying more or less until the white clover flow started in earnest. When bees started to build queen-cells, and swarming commenced in earnest, they were divided artificially and increased to 53 colonies. The white clover flow lasted nearly two months, and tons and tons of nectar went to waste because there were not enough bees to gather it. These 53 colonies gathered a little over 3200 pounds of the finest honey I ever had, and they would have done much better had they been as strong in numbers as in other years.

After the clover flow stopped the goldenrod and fall flowers commenced to secrete nectar. All of a sudden, on Sept. 15, it stopped and no more honey came in. During the fall the bees started swarming again. As late as Sept. 26, a fine stray swarm came to my apiary. On examining this colony later I found the brood-chamber filled with young bees and brood, but very little honey.

The bee-keepers that did not heed the warning of the bee journals, and did not feed their bees will find to their sorrow this spring their bees have starved to death in spite of the splendid flow we had last summer. My 53 colonies were fed over 600 pounds of sugar. G. A. BARBISCH.

La Crescent, Minn.

A Washington Letter

Bees have wintered splendidly, although nearly three months in the cellar without a flight. Cellar wintering is much to be preferred to any outdoor plan in this part of the State, for the reason that while we have many bright, calm days that entice the bees from the hives, it is seldom that the air is balmy enough for successful flights, and many of them soon drop and perish in the snow.

Only 100 miles south of here bees winter successfully on the summer stands with no protection; while we, being nearer the Cascades, sometimes have sleighing from the beginning of December until March.

Bees are doing better each year, as more young orchards reach the blossoming age, and as the fruit-growers realize the importance of cover crops among the trees. Alfalfa, vetch, and clovers are used mostly for this purpose, and being first-class honey plants are welcomed by the bee-keeper. Bee-pasturage, outside of the irrigated districts, is rather scant. Millions of flowers, blossoming in early spring, that would be valuable nectar producers if they came at a more congenial season, "waste their sweetness on the desert air," while the bees remain impatient prisoners at home, waiting for the few calm, bright days with which we are blessed at this time. How they seem to appreciate each warm day as they start forth joyously on their circling flights, prospecting for pollen in the tops of the pussy willows; while, in many places, tardy snowbanks still cover their roots.

J. D. YANCEY.

Port Columbia, Wash., March 27.

Too Many Bees in One Locality

Some people may think this Buckeye valley is a great place for bees, where the farmers raise so much alfalfa seed each year. The bees do fairly well, but there are so many bees here now it cuts the honey crop down low, and there is not as much profit in it as there used to be. There are no bees for sale here, and no good locations for bees that I know of but what are already taken up.

One of the bee-men sold about one-half of his bees two years ago, and was going out of the business, but now he is increasing his number very fast. He is putting in an apiary within one-half mile from another apiary. He has also put one within a half mile of my apiary. I guess he figures that his bees will not fly very far. Within a radius of 4 miles there are 900 colonies of bees, and only one-half of the range is alfalfa. The other is mesquite along the canal. Any one who has been thinking of coming to this valley to locate can get some idea of how many bees there are here.

ALBERT J. ROSS.

Buckeye, Ariz., May 15.

Feeding Sugar Candy

I saw a discussion in the bee-papers lately regarding the use of dry sugar for feeding bees during winter. I have practiced candy feeding for the purpose of carrying colonies through the winter that are short of honey. I don't often have them myself, but I find plenty among my neighbors that I buy for a "song," and take through the winter on candy. They make fine colonies the next year. I use granulated sugar for the candy, and add about one cup of honey to 10 pounds of sugar, as I think this makes a softer candy, and bees can use it better in dry freezing weather. I have fed the cube candy, and lost 4 colonies; all I fed with it in the winter of 1911-12. I find it too hard and dry.

In making the candy I am careful not to have it scorched, and this is easily avoided by stirring it all the time, and keeping the fire low at the last. When, by the usual methods, I find it has boiled enough I remove it from the fire, and continue to stir it until it begins to thicken a little, when I pour it into wooden butter dishes that hold about 3 pounds. I use it when cold by placing the plates upside down on top of the frames over the cluster of bees.

I have brought through to this day one of the smallest colonies of bees I ever tried to winter; a small 2-frame nucleus, and they have not a drop of honey in the hive; nothing but cakes of sugar candy. These bees are as bright and clean as any bees could be.

The only loss of bees in this locality this winter is from starvation, and that among the careless who keep a few colonies in any old box. A BOY.

Ashland, Ohio.

Foul Brood Bad in Wisconsin

My bees came through the winter fine. I have not lost a single colony, and never before except one in 1911-12. I winter my bees outdoors in chaff hives, and if they are packed right they will go through all right. I have 40 colonies now, and should we get a good honey season I will increase to 50 colonies. That is all I care to have. If I attend properly to 50 I have more profit than otherwise from 100 colonies. For the last three years we have had poor honey crops.

We have very few bees around here. We had several bee-men with 100 to 200 colonies, but today they have none—all killed by American foul brood. I do not think we have 200 colonies in our county. I hope our new law will help us to get rid of that pest; that is, if it will be enforced by the officers. If not, then a few years more and we will have no more bees in this county. I think I don't say too much if I say there are more than 1000 foul-broody hives standing around. So you can judge for yourself what the result will be. I have fought against the disease since it started here, but under these conditions I will never get rid of it.

Grafton, Wis., May 6 WM. NIERODE.

Flood Does Damage

I have almost been swept out of business. On March 25 we had the worst flood in 35 years. I lost nearly all of my bees and and had my bee-supplies ruined The water was almost in the house. I am washing the mud out of the hives that have a few bees in them in order to secure a few colonies

LOUIS WERNER.

Edwardsville, Ill., April 2.

Very Small Loss

Our bees are all out of the cellar, and I am examining them very carefully. Hardly any winter loss. Our north yard had just one, and that one was queenless. Bees are gathering pollen today from the poplar and aspen, and also the maple.

FRANK F. FRANCE.

Platteville, Wis., May 1.

APIARY OF J. H. KNESER, OF BARRINGTON, ILL.

Classified Department

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GOLDEN QUEENS that produce 5 and 6 band bees. Untested, $1.00; Tested, $3.00. 1A9t Robert Inghram, Sycamore, Pa.

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BEES AND QUEENS from my New Jersey apiary. J. H. M. Cook, 1Atf 70 Cortland St., New York City.

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VIRGINIA three-banded Italian queens. Untested, 75 cts. Tested $1.00. All dead queens replaced free. Ready May 15. 6A4t S. Click, Box 16, Rt. 2, Mt. Jackson, Va.

DAY-OLD Virgin Queens will please you. Good way to get fine Italian stock; 50 cents each; $5.00 per doz. Untested, $1.00. Tested, $1.50. Geo. H. Rea, Reynoldsville, Pa.

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WE WANT to get old numbers of American Bee Journal, especially those in Volumes 40 to 48, the years 1000 to 1908 inclusive. Those having any of these numbers should write at once, giving the dates of the ones they have. We will immediately quote a price on them. Address,
American Bee Journal, Hamilton, Ill.

FOR GOOD QUEENS AND QUICK SERVICE, you can't do better than place your order with me. I am prepared to handle any size of order at the following prices (Carniolan, 3-band Italian and Golden): One untested queen, $1.00; six for $5.40; twelve for $9.60. One tested queen, $1.50; six for $8.40; twelve for $15.60 One-frame nuclei, untested queen, $2.50; six 1-frame, $15.00; one-frame nuclei, tested queen, $3.00; six 1-frame, $17.40. Full colonies, one for $7.50; two for $14.00. If more frames are wanted than are listed, add $1.00 each for as many frames as are wanted with nuclei. No disease, and satisfaction guaranteed. W. J. Littlefield.
1015 W. 7th St., Little Rock, Ark.

SITUATIONS.

WANTED—Family to take care of poultry and bee-plant. Must know the business.
W. S. Morlan, Box 715, McCook, Neb.

WANTED AT ONCE, help in apiaries. State age, experience and wages in first letter. None others answered. 6A1t
The Rocky Mountain Bee Co.,
Forsyth, Mont.

SITUATION WANTED—Single man, 29, able, handy, sober. Will work for board with a successful apiarist in order to get information on Bee-keeping. 6A2t
Manos, Block A, No. 9, Pullman, Ill.

POULTRY

INDIAN Runner Ducks, light fawns, also dark penciled, white eggers, $1.00 and up.
R. O. Dickson, Box 61, La Harpe, Ill.

FOR SALE—Buff Orpington eggs, pure bloods; $1.00 for 15. Satisfaction guaranteed. 2A1y W. H. Payne, Hamilton, Illinois.

FOR SALE—White-egg strain Indian Runner Ducks, White Orpingtons, White Wyandottes, Houdans, Bronze Turkeys. Ducks, $1.25 each. A. F. Firestone,
Broadwell, Athens Co., Ohio.

WESTERN QUEENS

3-BAND LONG TONGUE ITALIANS FREE

As a special introductory offer we are going to give absolutely free with all orders for 12 tested or untested queens, one select queen. Offer good only until June 15.

PRICES: Untested, 1, 90c; 6, $4.80; 12, $9.00. Tested, 1, $1.35; 6, $6.50; 12, 12.00. Virgins, 40c; 3 for $1.00. Queens shipped on 1-fr. nuclei, $1.75 extra. Satisfaction guaranteed. Write for our new plan.

"Queens Made to Order."

GLEN L. EVANS, Greenleaf, Idaho
BREEDER AND IMPORTER OF FINE QUEENS.

Try My Famous Queens

From Improved Stock.

The best that money can buy; not inclined to swarm, and as for honey gatherers they have few equals.

3-Band, Golden, 5-Band and Carniolan

bred in separate yards, ready March 20. Untested, one, $1; six, $5; 12, $9; 25, $17.50; 50, $34; 100, $65. Tested, one, $1.50; six, $8; 12, $15. Breeders of either strain, $5. Nuclei with untested queen, one-frame $2.50; six one-frame, $15; two-frame $3.50; six two-frame $20.40; nuclei with tested queen, one-frame, $3.00; six one-frame, $17.40; two-frame, $4; six two-frame $23.40. Our Queens and Drones are all reared from the best select queens, which should be so with drones as well as queens. No disease of any kind in this country. Safe arrival, satisfaction, and prompt service guaranteed.

D. E. BROTHERS, Attalla, Ala.

Better Fruit

Published at HOOD RIVER, OREGON,

is the best, handsomest and most valuable fruit growers' paper published in the world It is handsomely illustrated and shows the Western methods which have been so successful in winning high prices.

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HOOD RIVER, OREGON.

QUEENS OF MOORE'S STRAIN OF ITALIANS

PRODUCE WORKERS

That fill the supers quick
With honey nice and thick.

They have won a world-wide reputation for honey-gathering, hardiness, gentleness, etc. Untested queens, $1; six, $5; 12, $9.00. Select untested, $1.25; six, $6.00; 12, $11. Safe arrival and satisfaction guaranteed. Circular free.

J. P. MOORE, Queen-breeder,
Route 1, Morgan, Ky.

JOHANN STRGAR

Wittnach. P. O. Wocheiner Feistritz,
Upper Carniola (Krain), Austria.

Breeder and Exporter of PURE CARNIOLANS

RAMER'S QUEENS

Of Moore's Strain of Italians

Ready June 15

Untested, $1.00; 6 for $5.00; 12 for $9.00

April 28, 1913.

P. B. RAMER, Harmony, Minn.—

Dear Sir:—The 30 queens I got of you in 1911 were the best queens; built up the fastest, and gave the largest yield of honey I have had in twenty years of bee-keeping. My average was 160 lbs. to the colony in 1912, and I lost a part of the flow for want of super room. Yours very truly,
HALVER J. HALVERSON.
Rt. 4, Preston, Minn.

Am Now Shipping Untested Queens from My

CELEBRATED PEDIGREED STRAIN!

AMERICAN GOLDEN ALL-OVERS QUEENS
P. E. SNYDER
Swarthmore,
PENNA. U.S.A.

My bees are the product of many years of breeding by both Swarthmore and Henry Alley. Both names stand out like beacon lights among our past and present breeders, for the best queens ever produced in the United States. Never had foul brood

SWARTHMORE APIARIES, · Swarthmore, Pa.

ITALIAN BEES

Choice Home Bred and Imported Queens

Reared in full colonies

Prices for May

One untest. queen	$1.10
One tested queen	$1.75
One select tested queen	$1.85
One Breeder	$3.10
One comb Nucleus, no queen	$1.15

½ lb. bees, $1.00; 1 lb. $1.90.
Safe arrival guaranteed. For description of each grade of queens send for free catalog.

J. L. STRONG,
204 E. Logan St., CLARINDA, IOWA

ITALIAN QUEENS

$1.00 EACH, $9.00 PER DOZEN.

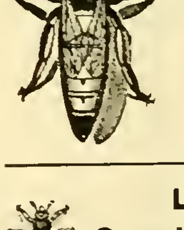
Queens are reared by as good a method as anybody can rear Queens. My stock is hearty and fine honey-gatherers. All queens shipped by return mail within 24 hours after I receive the order.

M. BATES, R. D. No. 4, Greenville, Ala.

BREEDING QUEENS . . .

Can be sent out any time after May 1. We have a choice lot of Italian queens at $2.50, $5.00, and $10.00. No untested queens before July. Send for circular.

Doolittle & Clark, -- Marietta, N. Y.
Onondago County

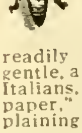


Fine Yellow

Italian bees & queens If you need a fine yellow Queen quick, try Fajen and you will order more. Extra fine queen, only $1.00; untested, 75c. 3-fr nucleus, only $2.75. Full colony in 8-fr. hive with fine tested queen, $5.50.

J. L. Fajen, Stover, Mo.

Line Bred Carniolan Queens!



Carniolans winter with their colonies most populous; build up best in the apiary; enter supers more readily cap their Honey very white; are gentle, and no more inclined to swarm than Italians, if properly managed. Ask for FREE paper, "SUPERIORITY OF THE CARNIOLAN BEE," explaining these bees more fully, and best management for comb and extracted honey. A limited number of nuclei and 8-fr. colonies for sale at end of June.

Untested, $1.00; doz., $9. Tested, $1.50; doz., $12.

ALBERT G. HANN,
Carniolan Queen Breeder. PITTSTOWN, N. J.

ROOT'S POWER HONEY-EXTRACTORS

Our new catalog is full of information about these labor-saving machines. With the difficulty of getting competent help, the power extractors are being sold largely in this and foreign countries, and the present demand is far greater than ever before. Read what a California producer says in a letter to a disinterested party, which we were permitted to publish:

GENTLEMEN:—I should like to say a few words in favor of the ball-bearing Root Automatic Extractor, as I believe it is as near perfection as it can be. This machine runs so easily that a few turns to get it up to speed is all that is necessary; and the men, while using the No. 17, which I formerly had, could average only 1000 lbs. per day, while with this machine they can average 2000 lbs. with but one additional man. No apiary can afford to be without one of these machines.

I feel like congratulating The A. I. Root Co. for making an invention that is such a satisfaction, financially to the honey-producers' interests.
B. B. HOGABOOM, Elk Grove, Calif.

—HERE ARE A FEW MORE—

A word about the power extractor I purchased from you through H. L. Jones, of Goodna. I found it to work very satisfactorily, and it will do all it is claimed to do and more. I use the gasoline engine for several purposes besides driving the eight-frame extractor, such as driving the washing-machine for the lady of the house, and corn cracking and grinding. I consider it one of the best speculations I made in connection with the apiary.
F. C. GOLDER, Pittsworth, Queensland.

Yours of the 16th, also the brake-band for power-extractor, came to hand. Thanks for sending it so promptly. This is my second season with the power extractor. I would not like to be without it now, even if I had only fifty colonies.
DAVID RUNNING, Grindstone City, Mich., July 10, 1910.

I received the extractor I ordered of you some time ago. It arrived in good shape. I set it up and extracted 133 quarts of honey, sold it at 35 cents a quart. The extractor is just fine—does the work completely.
F. D. KING, Athens, Ohio, Aug. 16, 1912.

The engine I got of you this spring has done fine. We ran it all fall, and never had any trouble at all.
V. V. DEXTER, North Yakima, Wash., Jan. 19, 1911.

For Full Particulars See Our Catalog

The A. I. ROOT COMPANY, Medina, Ohio

BRANCH OFFICES

New York, 139-141 Franklin St.
Philadelphia, 8-10 Vine St.
St. Paul, 1024 Mississippi St.
Washington, 1100 Maryland Ave., S. W.
Chicago, 213-231 Institute Place.
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Syracuse, 1631 Genesee St.
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A Few Agents Handling these Goods:

California	Madary's Plaining Mill, Fresno
	Madary's Supply Co., Los Angeles
Colorado	Barteldes Seed Co., Denver
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Michigan	M. H. Hunt & Son, Lansing
New Mexico	Roswell Seed Co., Roswell
Missouri	Blanke Mfg. & Supply Co., St. Louis
	John Nebel & Son Supply Co., High Hill
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EARLY ORDER DISCOUNTS WILL

PAY THE FREIGHT ON BEE SUPPLIES!

28 years experience in making everything for the bee-keeper. A large factory specially equipped for the purpose, insures goods of highest quality. Write for our illustrated catalog today.

LEAHY MFG. CO. HIGGINSVILLE, MO. OMAHA, NEBR.

IF YOU are having trouble trying to live by eating by eyesight, send for my circulars and receive a slice of eating by brainsight.

C. W. DAYTON, Owensmouth, Cal.
The Ripe Honey Man

Early (FROFALCON) Queens "ITALIANS"

Untested Queens to June 1st $1.00 each. After June 1, 90c each. Special prices in large quantities. A 5-pound bucket of Orange Blossom Honey delivered at your door by express for $1.10.

JOHN C. FROHLIGER,
1642 Milvia Street, Berkeley, Calif.
Greater San Francisco, Calif.
Falcon Bee-Supplies, etc.

GOLDEN QUEENS

for business, 75c each, or 6 for $4.25. Untested, mailed promptly, for 25c, 50c, or $1.00 lots. Write me. Safe arrival guaranteed.

R. O. COX, Box 8, Garland, Ala.

CARNIOLAN QUEENS!

Untested $1.00 for one, $5 for six, $10.00 for twelve
Tested $1.50 for one, $8 for six, $15.00 for twelve

These queens are bred from the best strains selected after sending to queen raisers in many different places in Austria. Having bought all the bees within several miles of this Apiary we will agree to replace any untested queens that prove to be hybreds. Some of the best imported Carniolans show slight traces of yellow, but are gentle, not a cross hybred with two or three yellow bands.

WM. KERNAN, Dushore, Pa. Route No. 2.

WESTERN BEE-KEEPERS can save honey and get the best goods obtainable especially made to meet Western condition. Send for new catalog and special price-list to

Colorado Honey-Producers' Association
Denver, Colorado

Three-Banded ITALIAN QUEENS

Nothing but the Leather-Colored Bees bred by me. If you want supers of honey, use my Queens. Perfect Queens of Quality or money refunded. $1.00 each, or $9.00 per doz

C. S. ENGLE, Beeville, Texas

PHARR'S GOLDEN AND THREE BANDED ITALIANS

Untested - - $1.00
Tested - - $1.25
Breeders $3 to $5.00

We have 50 Golden and Three Band Breeders. Can mail from April 1 to 15. Place your orders now. Address,

JOHN W. PHARR,
BERCLAIR, TEXAS.

THE FAMOUS TEXAS QUEENS

ITALIANS! CARNIOLANS! BANATS!

Are Ready to Mail

PRICES:
Untested - - - 75c Each
$8.00 per doz.
Tested - - - - $1.25 Each
$12 per doz.

Circulars Free

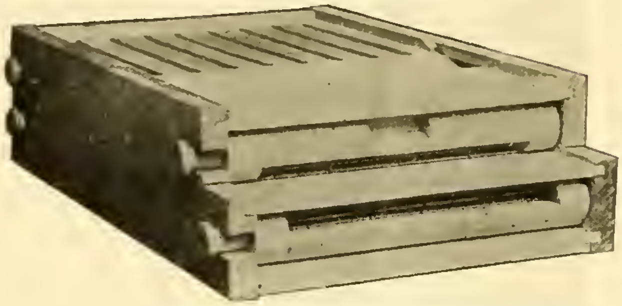
GRANT ANDERSON,
SAN BENITO, TEXAS.

The Robbers Disturb You When Feeding

Easy Solution, Use the

Schamu Patent Roller Entrance

HIVE BOTTOM



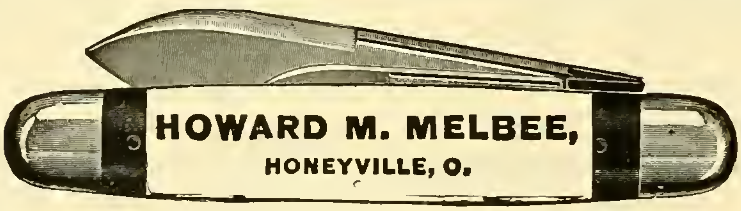
No worry When you are ready, adjust for swarming, or drones. Ask for a free folder

Proper Ventilation for Honey Flow.

PRICES: $2.00 F. O. B. LIVERPOOL, FOR 8 FRAME SIZE.
$2.50 F. O. B. LIVERPOOL, FOR 10 FRAME SIZE.

Dr. Chas. G. Schamu, Liverpool, N. Y.

BEE-KEEPER'S NOVELTY POCKET-KNIFE

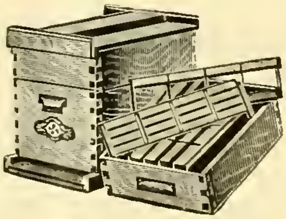


Your Name and Address will be put on one side of the handle as shown in the cut, and on the other side a picture of a Queen-Bee, a Worker-Bee, and a Drone-Bee. The handle is celluloid, and transparent, through which is seen your name. If you lose this Knife it can be returned to you, or it serves to identify you if you happen to be injured fatally, or rendered unconscious. The cut is the exact size; it is made of best steel. When ordering be sure to write exact name and address. Knife delivered within two weeks after we receive order.

Price, postpaid, $1.00; or with a year's subscription to the American Bee Journal—both for $1.80; or given FREE as a premium for sending us 3 New subscriptions at $1.00 each.

American Bee Journal, Hamilton, Illinois.

AT LITTLE ROCK, ARK.,



You can get your Bee Supplies and save time by sending your order to us, we can save you in FREIGHT as well as Money on supplies. Send for catalog of Supplies and Queens.

One Untested Queen, $1.00; six, $.500; twelve , $9.00. One Tested Queen, $1.50; six, $8.50; twelve, $15.00. One-frame Nuclei, Untested Queen, $2.50; six 1-frame, $15.00; one-Frame Nuclei, Tested Queen, $3.00; six 1-frame, $17.00.

If more Frames are wanted than are listed, add $1.00 each for as many frames as are wanted with Nuclei. No disease, and satisfaction guaranteed.

Little Rock Bee-Supply Company
1015 W. 7th Street - - - - Little Rock, Arkansas

FOLKS LIKE

Michigan Comb Honey

However, it is so scarce that they can't get much of it. It is a case of under production. Better make this year a comb honey year. Pages 12 and 13 of our Catalog show comb honey outfits—and they are all Root's goods. Beeswax wanted.

Italian Bees and Queens in half-pound and pound packages.

M. H. HUNT & SON,
143 Condit St., - Lansing, Mich.

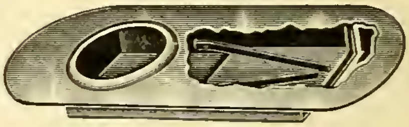
If You Need QUEENS

for Queenless Colonies, you want them in a hurry. We can fill your order for choice tested Queens by return mail for $1.00 each. Three band Italians. No disease. Satisfaction guaranteed. Send for price-list.

J. W. K. SHAW CO.,
LOREAUVILLE, Iberia Parish, LA.

P-O-R-T-E-R

(Trade mark)



BEE-ESCAPE

SAVES { HONEY TIME MONEY } AT ALL DEALERS

Each, 15c; Dozen, $1.65, postpaid

If your Dealer does not keep them, order from Factory, with complete instructions.

R. & E. C. Porter, Mfrs.
Lewistown, Illinois

3-Band Long-Tongued

Red Clover Italian

QUEENS

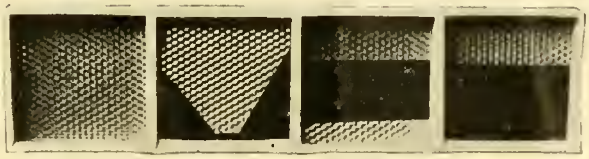
FOR SALE.—The 3-band queens are of the A. I. Root Co's improved long-tongued bees which have proven themselves to be the best of honey-producers. I use the Doolittle and Miller plans for queen-cells. One untested queen, 75 cts; 6 for $4.00; 12 for $7.50; 25 for $13.50; 50 for $25.00; 100 for $45.00. Double this price for tested queens. One-frame nucleus, $1.50, 2-frame, $2.50; 3-frame, $3.50. To each nucleus add the price of queen. No personal checks accepted

J. B. ALEXANDER, CATO, ARK.

"Falcon" Foundation!

Made in Our Plant at Falconer, N. Y.

From the sweetest and purest beeswax that can be obtained. No old stock—made daily by our own superior methods. Falcon foundation is coming in more constant use every year, and has proved itself to be most readily accepted by the bees.



Other Goods:—Double-grooved Hoffman brood-frames as well as sections will be needed for spring use. As it takes a lot of time to put up frames and sections with starters or full sheets, it would be well to look up your requirements. It will give you ample time by ordering now.

Light Standard Brood, . 1 lb., 58c; 5 lbs., 57c.
Extra Light Standard Brood 1 lb., 60c; 5 lbs., 59c.
Light Section, - 1 lb., 65c; 5 lbs., 64c.
Extra Light Section 1 lb., 70c, 5 lbs., 67c.

Write for samples of our foundation and Red Catalog postpaid. All goods guaranteed. A trial will convince you.
Distributers everywhere. Factory W. T. Falconer Mfg. Co., Falconer, N. Y.
Central States distributers: H. S. Duby, St. Anne, Ill., C. C. Clemons, Bee-Supply Co., Kansas City, Mo.

W. T. FALCONER MFG. COMPANY, - FALCONER, NEW YORK
Where the good bee-hives come from

"Griggs Saves Your Freight" **TOLEDO** "Griggs Saves Your Freight"

Is the place all successful bee-men have their eyes on now. The proof is the way orders are streaming in here from all over the United States.

PROMPTNESS, LOW FREIGHT RATES, AND BEST PRICES ARE OUR MOTTO

Our large three-story Warehouse right in the heart of the city, only 5 city blocks from **10** of the **largest trunk railroads** in the United States, gives us prompt service no other agent enjoys. We carry the Largest Stock of **Root's Goods** of any agent, and our force of competent **bee-men** of practical experience ensures you against errors and **delays.** Even the **Factory itself can't give you such promptness. Special Prices Quoted on Quantities.** Send us a list of your wants. Free catalog for the asking. Orders for BEES, QUEENS, NUCLEI, also BEES by the pound given Special attention. Beeswax always wanted.

CHICKEN FEED OF ALL KINDS AT JOBBERS' PRICES.

S. J. Griggs & Co., 24 N. Erie Street., Toledo, Ohio "GRIGGS IS ALWAYS ON THE JOB."

Do You Want to Know How to Manage 3000 Colonies of Bees in 50 Yards?

Do you want to learn modern bee-keeping upon modern principles? Upon principles of magnitude? Do you want to know how to Morganize bee-keeping? Do you want to know how one man by the turn of his hand started 50 bee-yards, turning honey into one modern reservoir? It was but 15 years ago we were told one man could find all he could profitably do with one bee-yard. Now comes this modern giant of beedom managing 50 yards that contain an aggregate of 3000 colonies.

The Bee-Keepers' Review has made arrangements with this giant of modern methods of honey-production, a method that will revolutionize bee-keeping of the future. A series of ten articles that will begin with the July number of THE BEE-KEEPERS' REVIEW, are from one of the very best known writers of the day.

The only way you can secure this treat of unusual interest, is to sit right down this minute and write your check for a dollar for a year's subscription to THE BEE-KEEPERS' REVIEW, Northstar, Michigan. 50 cents more will make you a member of the NATIONAL for one year. **Do it now!**

THE BEE-KEEPERS' REVIEW, Northstar, Michigan

NOTICE! QUEENS!

From Caraway Prize Winner Stock—Ready to Go by Return Mail

THREE-BANDED ITALIANS ONLY

Untested queens, 90c each; 12 for $9.00. Tested queens, $1.00 each; 12 for $10. Breeder queen, $5.00 each. I also sell nuclei. One 2-frame nucleus for $3.00; 10 2-frame for $27.50. Bees by the pound at $1.50; per lb., 10 1-lb. packages for $12.50. Add to these prices the price of the queen or queens desired. These prices are f. o b. Mathis. I guarantee nuclei and bees by the lb to arrive in good condition within 1250 miles of Mathis. Positively no disease in my apiaries. Health certificate furnished with each shipment. I guarantee every queen to give entire satisfaction. This is a square deal. I hold 92 first prizes, 45 second, and 2 third prizes on my bees, queens, and products of my apiaries. This speaks for itself—NONE better. My 3-banded Italians carried off first prizes again at Dallas and Waco fairs last fall. All of these prizes have been won in the last three years. Queen circular free.

B. M. CARAWAY, Queen Specialist - - Mathis, Texas

Please mention Am. Bee Journal when writing.

We Make a Specialty of Manufacturing SECTIONS

They are the Finest in the Land—None Better.

Our Prices will make you smile. We want to mail OUR BEE-SUPPLY CATALOG to every bee-keeper in the land. It is FREE. Ask for it.

H. S. Duby, St. Anne, Ill., carries a full line of Our Goods, and sells them at our regular catalog prices.

AUG. LOTZ & CO.
Boyd, Wis.

Please mention Am. Bee Journal when writing.

W. H. Laws

Will be ready to take care of your queen orders, whether large or small, the coming season. Twenty-five years of careful breeding brings Laws' queens above the usual standard; better let us book your orders now.

Tested queens in March; untested, after April 1st. About 50 first-class breeding-queens ready at any date.

PRICES: Tested, $1.25; 5 for $5.00; Breeders, each $5.00. Address

W. H. Laws, Beeville, Texas.

Please mention Am. Bee Journal when writing.

SAVE TIME, fold your sections and put in foundation at one operation, quick and perfect with a Rauchfuss Combined Section Press and Foundation Fastener, guaranteed to give satisfaction. Send for illustrated circular. Price, $3.00 delivered anywhere in U. S.

Colorado Honey-Producers' Association
Denver, Colorado

HONEY AND BEESWAX

CHICAGO, May 17.—The market has cleaned up quite well on extracted honey during the past month, and prices remain about the same as in our previous quotation. The clover and linden bringing 9@10c per pound when in every sense perfect; other white honeys 8@9c per pound. Amber grades 7@8c per pound. No. 1 to fancy white comb honey 17@18c per pound; other grades from 1@5c per pound less, with very little on the market. Beeswax 30@32c per pound, and in good demand. R. A. BURNETT & CO.

KANSAS CITY, MO., May 21.—Our market is bare of comb honey; good demand. Supply of extracted fair; light demand. We quote as follows: Extracted, white, per pound, 8@8½c; extracted, amber, 7@7½c. Beeswax, per pound, 25@28c.
C. C. CLEMONS PRODUCE COMPANY.

BOSTON, May 22.—Fancy and No. 1 white comb, 16@17 per pound. Fancy white extracted in 5-gallon cans, 11@12c. Beeswax, 30c. BLAKE,-LEE COMPANY.

INDIANAPOLIS, May 21.—The market is practically bare of fancy white comb honey. No. 1 white is selling at 16@17c per pound; amber comb in slow demand and at varied prices. Best extracted sells at 11@12c per pound in 5-gallon cans, according to quantity at one shipment. Beeswax is in good demand, and producers are being paid 30c per pound cash. WALTER S. POUDER.

SAN FRANCISCO, May 20.—There is very little of the old comb honey on the market, and we are promised some of the new very soon, and have had some new extracted honey in very small quantities. The demand for extracted honey has been better than for some time, and the crop so far in this section will be limited. Fancy comb honey at 14@15c. Water-white extracted at 9@9½c; light amber, 7½@8c; amber, 6½@7c; dark, 5@6c. Beeswax, 24@30c per pound.
JOHN C. FROHLIGER.

DENVER, May 22.—No more comb honey to offer. We quote extracted honey in a jobbing way at the following figures: White, 9c; light amber, 8c; strained, 6¾@7c. We pay 28c in cash per pound, and 30c per pound in trade for clean yellow beeswax delivered here.
THE COLO. HONEY-PRODUCERS' ASS'N.,
Frank Rauchfuss, *Mgr.*

CINCINNATI, May 23.—There is a fair supply of comb honey on the market, and we are selling our fancy double-decker comb honey at $3.75 to $4.00 per case. Fancy extracted honey in 60-pound cans at 9@10c a pound, and amber extracted honey in barrels at 6½@8c a pound, according to the quality and quantity purchased. For choice bright yellow beeswax we are paying 28@30c a pound delivered here, and if taken out in trade we allow 2c a pound more.
THE FRED W. MUTH CO.

NEW YORK, May 22.—There is nothing new to report; some few straggling lots of comb honey are still arriving and selling at from 14@16c for No. 1 and fancy white; lower grades at from 12@13c. Extracted is quiet with heavy shipments arriving from the West Indies, and the demand being dull prices are declining. We have no new southern as yet, but expect to have the first shipment within a week or so. Beeswax steady at 30@31c. HILDRETH & SEGELKEN.

CINCINNATI, May 20.—The market on comb honey is in good demand, with a fair supply. No. 1 white selling at $3.65 per case of 24 sections wholesale, and $4.00 per case retail. There is no demand for off grades. Light extracted honey in 60-pound cans, 8@8½c. White extracted honey in 60-pound cans, 9@10c. Beeswax is selling at $34 per 100 pounds.

The above are our selling prices, not what we are paying. C. H. W. WEBER & CO.

LOS ANGELES, May 20.—Stocks of white extracted honey on the coast are entirely exhausted, and are not quotable at any price. Light amber extracted honey is in light supply, and is quotable in carload lots at 6¾c f. o. b. Coast. Comb honey is in very light supply, and there is scarcely enough left for local consumption. Beeswax is selling to eastern buyers at about 30c per pound.
HAMILTON & MENDERSON.

Notice to Bee-Keepers

I am now taking orders for pound packages and nuclei; also for my leather-colored strain of Italian queens mated on an island, and bred in their purity. Free from all disease. Prices made on application. My guarantee — Your money back if not satisfied; a liberal discount on all large orders. Reference, The American Exchange Bank of Appalachicola, Florida.

A. B. Marchant

ITALIAN QUEENS

Golden untested, $1.00; six, $5.00. Tested, $1.50; six, $8.00. Virgin, 40c; six, $2.25; doz. $4.50. Our queens are extra fine this season. Every queen guaranteed to give satisfaction. Ready for shipment direct to customers. Nuf ced. 5Atf

E. A. SIMMONS, Greenville, Ala.

Eastern Bee-Keepers

Furnishing bee-supplies has been our business for 22 years. We are also honey-producers, operating several hundred colonies for honey. We have started many people who have made a success of the business. We still furnish them their supplies. They stick to us. You will if you get acquainted. We advocate only practicle articles. Let us mail you our catalog on what you may need.

I. J. STRINGHAM,
105 Park Place, New York City
APIARIES: Glen Cove, L. I.

BEE-SUPPLIES at low prices. Discount for early orders. Send 25c for 90-page illustrated bee-book for beginners; a chapter on foul brood. Catalog free.

J. W. ROUSE, Mexico, Mo.

ALSIKE CLOVER SEED.

Small red, Mammoth, timothy, alfalfa, sweet clover, (white or yellow) millet, rape, blue grass, etc., also seed corn, thoroughbred, four varieties. Catalog apiary supplies free. Honey new in July and later.

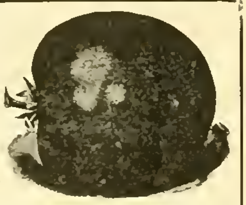
F. A. SNELL,
Milledgeville, - - - Carroll County, Ill.

OUR HAND-MOORE STRAIN
3-Band Italians

Are the best Honey-Gatherers. They spoil our white-clover honey by mixing it with red clover. Record tongue reach 23-100 of an inch. Bred strictly for business. Untested 75c; 12 for $8.00; 50 for $25.00. Select mated, $1.00 each. Virgins, 40c each, or $4.00 per dozen. *HONEY WANTED.*

LATSHAW HONEY COMPANY,
CARLISLE, IND.

A TRIAL PACKET of *This Grand TOMATO*
FREE!



Rowe's GRAND RAPIDS MARKET TOMATO was originated by Mr. George E. Rowe, the Editor of THE FRUIT BELT, America's Greatest Fruit Magazine. This tomato is the very earliest of the heavy cropping varieties, it yields abundantly, a Grand Shipper, and is the Most Delicious Tasting tomato ever put upon the market. In Size, the individual fruits will average a half-pound each, and are very uniform in shape, size, and color. There are few seeds, as the tomato is solid, and cuts like a piece of beef-steak. One grower near Grand Rapids, Mich., sold OVER TWO THOUSAND DOLLARS worth of these tomatoes off of two thousand vines. We are willing to stake our reputation on this tomato. The seed cannot be procured from Seedsmen, as we own the entire stock. We are GIVING IT AWAY to introduce THE FRUIT BELT, and you can get a packet, if you act now.

The Fruit Belt America's Greatest Horticultural Journal

Shows you How to Make Money Raising Fruit: How to Prune and Thin Properly: How to Control Insects and Plant Diseases by Spraying: What Varieties to Plant: How to Set out New Orchards: How to "Rejuvenate" Old Orchards. THE FRUIT BELT is a Big Illustrated Magazine, Filled with Good Things for You.

TRIAL OFFER *We will send THE FRUIT BELT to your address for the remainder of this year, upon receipt of Thirty Cents, and we will send to you, by return mail FREE, a trial packet of Rowe's Grand Rapids Market Tomato seed. Don't delay, the stock is limited. Address - -*

THE FRUIT BELT R.112, HAWKINS BUILDING
GRAND RAPIDS, MICHIGAN

Established 1885

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Write for our 64-page catalog free, and for lowest prices on supplies. Full information given to all inquiries. We handle the best make of goods for the bee-keeper. Freight facilities good. Let us hear from you.

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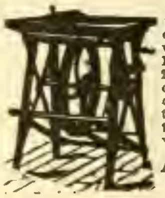
High Hill, Missouri

BARNES' Foot-Power Machinery



Read what J. I. PARENT, of Charlton, N. Y., says: "We cut with one of your Combined Machines, last winter, 50 chaff hives with 7-in. cap, 100 honey-racks, 500 brood-frames, 2,000 honey-boxes, and a great deal of other work. This winter we have double the amount of bee-hives, etc., to make, and we expect to do it with this Saw. It will do all you say it will." Catalog and price-list free.

Address, W. F. & JOHN BARNES
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"Bee-Keepers' Guide"

This book on bees is also known as the "Manual of the Apiary." It is instructive, interesting, and both practical and scientific. On the anatomy and physiology of the bee it is more complete than any other standard American bee-book. Also the part on honey-producing plants is exceptionally fine. Every bee-keeper should have it in his library. It has 544 pages, and 295 illustrations. Bound in cloth. Price, postpaid, $1.20; or with a year's subscription to the American Bee Journal—both for $1.90. Send all orders to the office of the American Bee Journal.

"If goods are wanted quick, send to Pouder."

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EQUIPMENT Store room built expressly for the business; large concrete basement with just enough moisture to prevent breakage in sections; no shrinkage in dovetailed corners of supers and hives.

QUALITY Root goods at factory prices. The kind that I have sold for nearly a quarter of a century, and the kind that you can afford to recommend to your neighbors. I might have increased my profits for a short time by handling other goods, but I would not have remained so long in business. Many articles in my catalog can reach you by Parcel Post, and I assume all responsibility in safe delivery of the goods. Catalog free.

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A BOYUM FOUNDATION FASTENER

Is just what you want. Price, postpaid, $1.75. And a

BOYUM SECTION PRESS

Price, postpaid, only $1.00. Both, postpaid, for $2.50

Manufactured by **The Boyum Apicultural Co., Rushford, Minn.**

COMB FOUNDATION

WITH THE SAME TASTE
WITH THE SAME SMELL
WITH THE SAME FIRMNESS
AS THE COMB THE HONEY-BEE MAKES

How do you Obtain Yours?

THE OLD WAY:—By selling your Beeswax. Reasonably sure but expensive.

THE DITTMER WAY:—By shipping your wax to us and having it made into Comb Foundation and then returned to you.

Write us for further information and samples, also prices and discounts on Bee-Supplies

Gus Dittmer Company, Augusta, Wisconsin

Rebuilt Remington Typewriters (No. 6)
or Smith Premier Typewriters (No. 2)

Prices, $30 to $35. Send $5.00 down and we will send the machine. **GREAT OPPORTUNITY.** Address,

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Bee-Supplies

We are Western Agents for

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Write for Fall Discounts—we can save you money. 1Atf

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Manufacturers
OF THE
"NONE BETTER"
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Perfect sections from young, white, basswood. White Pine Hives and Supers. Excellent Shipping-Cases, Brood-Frames, Separators, etc. We invite your correspondence.

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This fine 90c Honey-Spoon and the American Bee Journal for one year—both for only $1.75. Send all orders to the American Bee Journal, Hamilton, Ill.

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Northern bred

Superior winterers, second to none. My free list explains it all. Untested, $1.00; select tested, $1.50. Bees by pound or half pound. Plans, "How to Introduce Queens" 15c; "How to Increase" 15c; both 25c.

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30 to 75 Percent Discount

Compare our prices with other dealers, and see if we can't save you dollars, and we will guarantee you satisfaction. If you have combs, why not put bees on them? ½ lb., $1.25; 1 lb., $2.00; 2 lb., $3.75; 3 lb., $4.50. Untested queens, $1.00. Tested, $1.50. Nuclei, $1.00 per frame. Full colonies in 8-frame hive, only $5.00. Full colonies in 10-frame hive, only $6.00. We will furnish tested queens with full colonies for $1.00.

Where can you beat these prices? We will guarantee the stock to be pure and good as can be had. Hives are Root make.

The Stover Apiaries
Mayhew, Mississippi

An Active Season is Here!

A carload of perfectly new goods is just on hand from the factory, and another car is expected any day, and the factory has booked us for four cars. This brings up our assortment so that we can now furnish almost anything listed in the catalog at once.

Hives should be ordered at once if they are to be ready for swarms. Frames, and other inside fixtures, too, should be put together now.

If you are wanting any special goods, orders should be made at once. Other cars are coming regularly from the factory, and we can save you considerable in transportation charges by having your goods come with ours in the car.

The mailing of our new catalog was completed some time ago. If you are not on our mailing list send us a postal-card request for this catalog.

If you want to buy in quantities considerably larger than quoted in the catalog, give us a list of your needs and we will quote price accordingly.

If you have never tried Root quality goods, make a beginning this season. You will not be disappointed in results. Our branch is maintained for service in this line and we can give it to your entire satisfaction.

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C. H. W. WEBER & CO.

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CINCINNATI, - - - - - - - OHIO.

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No order too large
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HAMILTON, ILLINOIS.

Vol. LIII JULY 1913

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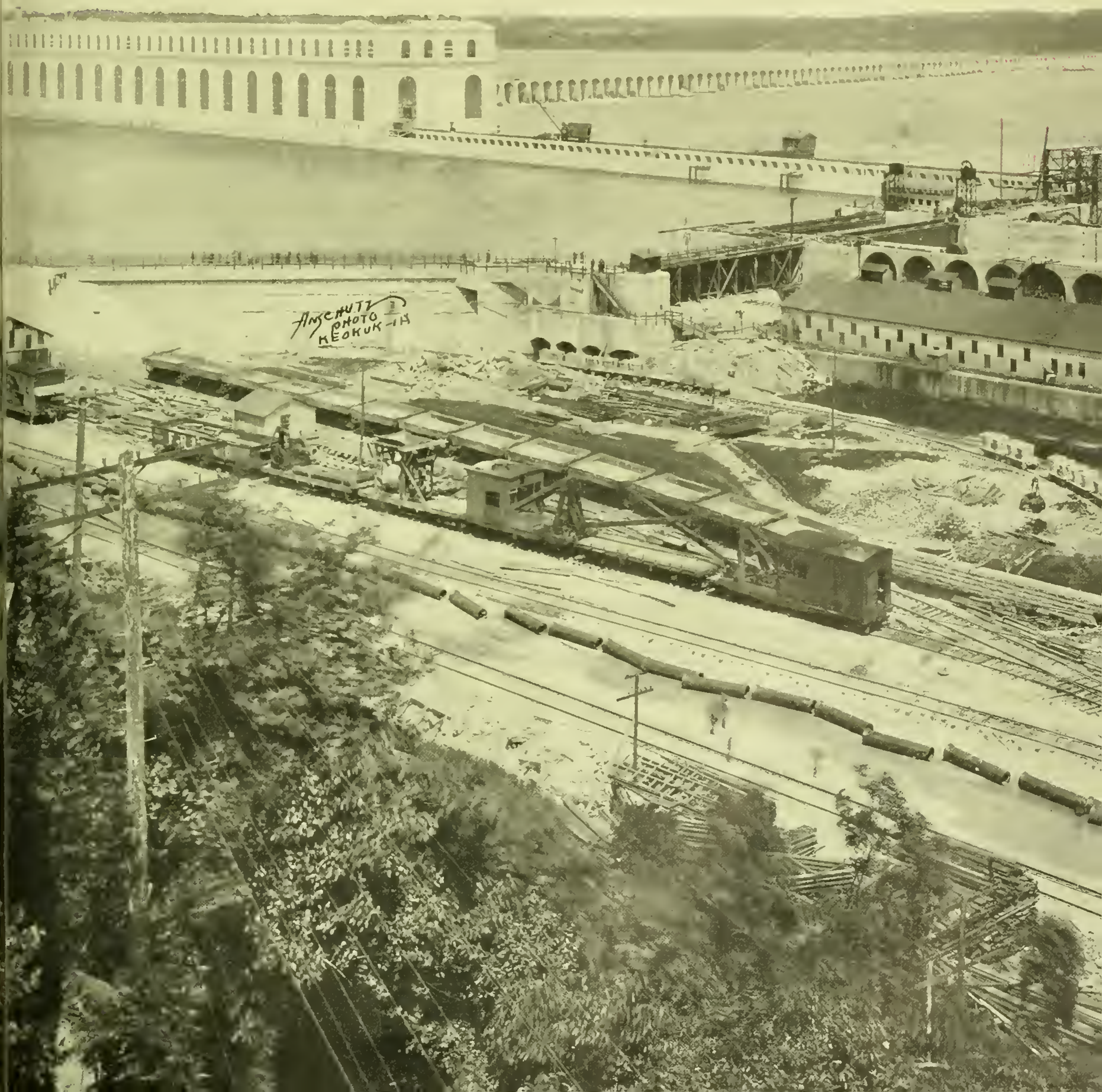
AMERICAN BEE JOURNAL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AMERICAN
ESTABLISHED IN 1861
OLDEST BEE PAPER IN AMERICA
BEE JOURNAL

PUBLISHED MONTHLY BY
American Bee Journal
1st Nat'l Bank Bldg. Hamilton, Illinois

IMPORTANT NOTICE

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THE WRAPPER-LABEL DATE indicates the end of the month to which your subscription is paid. For instance, "dec13" on your label shows that it is paid to the end of December, 1913.

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I have a Large and Complete Stock of BEE-SUPPLIES at **Cordele, Ga.,** and have erected a large Warehouse and filled it with New Bee-Supplies at **O'Brien, Fla.,** near Live Oak, the best shipping-point for all sections of Florida, Southeast Georgia and Southern Alabama.

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Best white pine hive 1½ story 8 frame, $1.45; 10 frame, $1.60 in lots of 5. Best sections per 1000, $4.40; 2000, $8.60; 3000, $12.60; 5000, $20; No. 2, 50c less. Plain 25c less.

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Your busy season is close at hand, get wise and place your order with the supply dealer who will save you money and serve you best with **Root's Quality** sections, foundation, frames, smokers, extractors, etc. I can serve you without **delay**. My 1913 catalog tells all about these things, besides it contains a lot of information to those interested in bees.

Special attention given to the breeding of three-banded Italian bees and queens.

Catalog free.

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Lyonsville, - - - Mass.

How Far Can a Bee SEE?

That question has been argued "time and again," but it doesn't worry me one-half so much as does another question,

HOW MUCH CAN YOU SEE?

How many people there are to look and how few there are to see and to think. The best realms for good seeing are in nature.

The Guide to Nature
tells you how.

It teaches people to see the wonders and beauties of nature.

$1.00 per year **10c a single copy**

EDWARD F. BIGELOW, Editor
The Agassiz Association, Inc.,
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—— NOW THEN ——

For Your Early Bee-Supply Orders

Send us a list of the Bee-Supplies you want. Our prices will astonish you.

Also send us your Old Combs—we will render your wax and save you money.

Write for particulars

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"The Busy Bee-Men"
204 Walnut Street, CINCINNATI, OHIO

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BEE-KEEPERS:—

We manufacture Millions of **Sections** every year that are as good as the best. **The CHEAPEST** for the Quality; **BEST** for the Price. If you buy them once, you will buy again.

We also manufacture **Hives, Brood-Frames, Section-Holders and Shipping-Cases.**

Our Catalog is free for the asking.

Marshfield Mfg. Co., Marshfield, Wis.

A Muth Bee-Veil for 65c

I have several dozens of the Muth wire-and-cloth Bee-Veils—a dandy veil—which I will mail for 65 cents each. Order quick if you want one before all are gone.

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This is a 50-cent book which I will mail for 30 cents so long as they last.

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The $1.00 postpaid size I will mail for only 80 cents. It's a fine bee-smoker. Order at once if you want one.

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Till further notice, I will fill orders for "Honey as a Health Food"—the great honey-selling booklet—at the following prices:

Sample copy free; 10 copies 20 cents; 50 copies 75 cents; 100 copies, $1.00; 250 copies for $2.00; 500 copies for $3.75; or 1000 copies for $7.00.

These are all postpaid or express prepaid prices. The time to sell the honey crop will soon be here again. It is a fine thing to have a good supply of the above booklets on hand, ready for distribution among those you would like to secure as customers.

Your Name and Address on a Rubber Stamp

It is a nice thing to have a rubber stamp with your name and address. You can then stamp the letters you write, or the envelops you use, or anything at the bottom of the booklets, "Honey as a Health Food," for stamping your name and address.

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One Line Stamp...........	30 cents
Two " "	45 "
Ink Pad (2½x3¾ inches)..	15 "

All orders will have prompt and careful attention. Address,

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Untested ITALIAN QUEEN-BEES

OUR STANDARD-BRED

6 Queens for $4.50; 3 for $2.75; 1 for $1.00

For a number of years we have been sending out to bee-keepers exceptionally fine Untested Italian Queens, purely mated, and all right in every respected. Here is what a few of those who received our Queens have to say about them.

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Gentlemen:—Last October I purchased three queens of you for my experiments with different queens, and wish to ask you if queens of this season will be of this stock? One of the Queens is the most remarkable queen I ever owned for prolificness, which she transmits to all her daughters.
Riddle, Oreg., July 4, 1912. L. W. WELLS.

AMERICAN BEE JOURNAL—
Gentlemen:—The queen you sent me came in good condition. She was one of the best I have ever bought. I have her introduced and she is doing business as if to the manor born. I want another of those beautiful queens as soon as I can possibly get it for making up my fair exhibit. Please send a fine one. Such queens certainly advertise your business.
Darlington, Wis., July 31, 1912. C. R. BRIDGMAN.

AMERICAN BEE JOURNAL—
Gentlemen:—I bought a queen of you about 35 years ago, and from her I Italianized 150 colonies of the finest beauties of unusual good qualities. I lived near Milton Center, Ohio, at the time. Yours truly,
Portales, New Mexico, July 10, 1912. J. W. HOUTZ.

We usually begin mailing Queens in May, and continue thereafter on the plan of "first come first served." The price of one of our Untested Queens alone is $1.00, or with the old American Bee Journal for one year, both for $1.60. Three Queens (without Bee Journal) would be $2.75, or six for $4.50. Full instructions for introducing are sent with each Queen, being printed on the underside of the address card on the mailing-cage. You cannot do better than to get one or more of our fine Standard-bred Queens.

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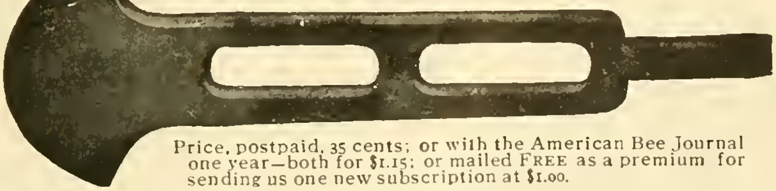
The Ideal Hive-Tool Free as a Premium

NICKEL PLATED.

Exactly half actual size.



Price, postpaid, 35 cents; or with the American Bee Journal one year—both for $1.15; or mailed FREE as a premium for sending us one new subscription at $1.00.

This is a special tool invented by a Minnesota bee-keeper, adapted for prying up supers, and for general hive and other work around the apiary. Made of malleable iron, 8½ inches long. The middle part is 1 1-16 inches wide, and 7-32 thick. The smaller end is 1⅞ inches long, ½ inch wide, and 7-32 thick, ending like a screwdriver. The larger end is wedge-shaped, having a fairly sharp, semicircular edge, making it almost perfect for prying up hive-covers, supers, etc., as it does not mar the wood. Dr. C. C. Miller, who has used this tool since 1903, says: "I think as much of the tool as ever."

American Bee Journal, Hamilton, Illinois.

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Notice My Ad About the
CAUCASIANS

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A. D. D. WOOD

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FAMOUS QUEENS DIRECT FROM ITALY
Bees More Beautiful, More Gentle, More Industrious, The Best Honey-Getherers.

Universal Exposition, St. Louis, HIGHEST AWARD.

Extra Breeding Queens, $3; Selected, $2; Fertilized, $1.50; lower prices, per doz., 50 or 100 Queens. Safe arrival guaranteed. Write

Member of the National Bee-Keepers' Ass'n
ANTHONY BIAGGI,
Pedevilla near Bellinzona, Italian Switzerland.

This country, politically, Switzerland Republic, lies geographically in Italy, and possesses the best kind of bees known.

Please mention Am. Bee Journal when writing.

CARNIOLAN QUEENS!

Untested $1.00 for one,	$5 for six,	$10.00 for twelve
Tested $1.50 for one,	$8 for six,	$15.00 for twelve

These queens are bred from the best strains selected after sending to queen raisers in many different places in Austria. Having bought all the bees within several miles of this Apiary we will agree to replace any untested queens that prove to be hybreds. Some of the best imported Carniolans show slight traces of yellow, but are gentle, not a cross hybred with two or three yellow bands.

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Three-Banded ITALIAN QUEENS
Nothing but the Leather-Colored Bees bred by me. If you want supers of honey, use my Queens. Perfect Queens of Quality or money refunded. $1 00 each, or $0.00 per doz.
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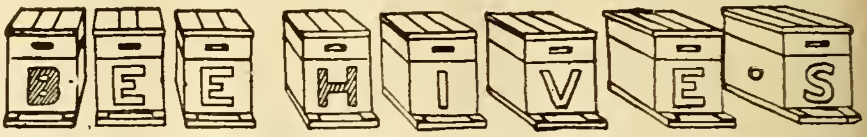

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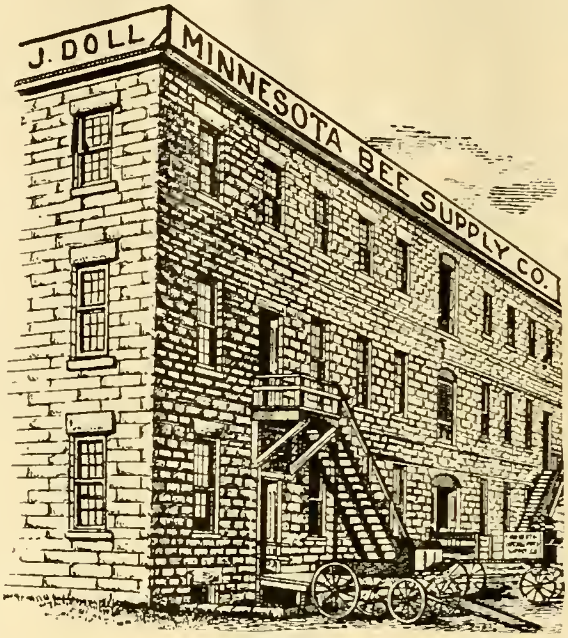

The picture that we showed in the Apr. issue of this Journal was of our mill and property at Buffalo, Minn. This cut shows our factory at Minneapolis.
We manufacture Dovetailed hives, supers, sections, shipping-cases brood-frames, separators, also berry boxes and crates. Catalog free.

MINNESOTA Bee-Supply Co.,
100 Nicollet Island,
Minneapolis, Minn.

GOLDEN ADEL QUEENS
AND BEES BY THE CAR LOAD

You will make money if you deal with me and get my factory price on Bee Supplies. I have millions of fine Sections. I am the oldest and largest Bee Supply manufacturer in the Northwest. Send for Catalog.

CHARLES MONDENG,
145 to 160 Newton Ave. N.
MINNEAPOLIS, MINN.

Early (FROFALCON) Queens
"ITALIANS"

Untested Queens to June 1st $1.00 each. After June 1, 90c each. Special prices in large quantities. A 5-pound bucket of Orange Blossom Honey delivered at your door by express for $1.10.

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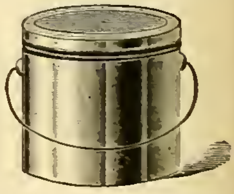
1642 Milvia Street, Berkeley, Calif.
Greater San Francisco, Calif.
Falcon Bee-Supplies, etc.

CO-OPERATION means buying right and **selling right**. We are a co-operative association, and sell the best Bee-Supplies obtainable at the right prices. It will pay Western Bee-Keepers to send for our Illustrated Catalog.
Colorado Honey-Producers' Association
Denver, Colorado



FRICTION-TOP PAILS
For
Honey
Syrups
Sorghum
Etc., Etc.
GILLE MFG. CO., Dept. S., Kansas City, Mo.

SHAW QUEENS
By return mail
Three-band Italians. What need say more? Every one knows them. Tested, $1.00 each. Untested, 75c single queen; $7.00 per dozen. No disease, and satisfaction guaranteed.
J. W. K. SHAW & CO.,
Loreauville - - Louisiana

AMERICAN BEE JOURNAL

(Entered as second-class matter at the Post-Office at Hamilton, Ill., under Act of March 3, 1879.)

Published Monthly at $1.00 a Year, by American Bee Journal, First National Bank Building

C. P. DADANT, Editor.
DR. C. C. MILLER, Associate Editor.

HAMILTON, ILL., JULY, 1913

Vol. LIII.—No. 7

EDITORIAL COMMENTS

Does the Loss of a Sting Cause a Bee's Death?

In Bien. Centralblatt, page 7, is quoted the experiment of G. M. Doolittle, who confined, in a cage, bees which had lost their stings together with others still having their stings, and found no difference as to length of life. Dr. Zander repeated the experiment, and found the mutilated bees quite feeble at the end of four days, while the others were still quite lively. It would be interesting to know whether the loss of the stings occurred in exactly the same way in the two cases. In any case it seems that a bee may live a considerable time after losing its sting.

C. C. M.

We once had the curiosity to test this matter. A half dozen bees were placed under a glass bell, after their stings had been removed carefully so as to damage the internal organs as little as possible. To these were added several bees direct from a hive, and also several which had lost their stings in the usual manner. All the bees were then supplied with plenty of food. At the end of five days, all the bees which had lost their stings naturally had died. At the end of twelve days, the six whose stings had been removed carefully were also dead, while only one of the bees direct from the hive had succumbed, the others appearing about as lively as ever.—EDITOR.

May Disease Cure

Miss Merta Mitchell, of Keokuk, Iowa, reports a radical cure of the May disease by sprinkling the bees with an infusion of senna leaves. This mild physic is licked up by them as the best way to get rid of the spray. This is surely not expensive, and it is worthy of a trial.

Solar Wax Extractors vs. Water Rendering

In one of the foreign bee-journals remarks have been made recently upon the inadvisability of using the solar extractor for beeswax when old combs are to be rendered. The writer of the article says the result is nil.

Solar wax extractors are very useful in an apiary. but it is mainly for the purpose of saving bits of wax that would otherwise be lost or neglected. When handling bees, the average apiarist likes to do away with the bur combs, braces and bridges, which the bees are so fond of building at the upper edge or against the ends, whenever they are a little crowded for room. These bur combs cause bees to be crushed in handling who would otherwise be safely handled; they are in the way of the supers. But we need to remove them constantly because every season the bees build new ones. In an apiary there is nothing better than throwing those bur combs at once in a solar extractor. They are out of the way, and become wax without any labor or further attention on our part.

In rendering old combs, the case is different, and there are many apiarists who are ready to assert that very old, thick, black combs yield no wax. This is true if the solar extractor is used. Why?

Have you ever tried to dip your fingers into melted wax, at a sufficiently low temperature not to burn you fingers? If you have done so with a dry finger, you have been sorry of it at once, for the wax has soaked into the pores of the skin and has been removed with great difficulty. If you have moistened your finger slightly, you have experienced less difficulty, because the moisture has prevented the wax from sticking. But if you have moistened your hand thoroughly, after having singed the hair to which the wax might fasten itself, and have slightly oiled your nails, because they never get sufficiently moist, you will be able to dip your whole hand into the liquid wax and make a gauntlet of wax which will assume the shape of your fingers and will be loosened readily, with a little care. The action of the wax upon the cocoons and the so-called "slum-gum" is exactly the same as its action upon your fingers. If the old combs be thoroughly moistened by sufficient soaking previous to rendering, the wax will not stick to them but will readily float at the top of the boiler, when heat is applied. The only need is to soak them long enough to wet them thoroughly. This point is of more importance than many people believe, and it is only necessary to give it a trial to realize its correctness.

Has the reader ever made a comparison between a freshly-built comb and an old one in which hundreds of generations of young bees have left their cocoons, at the rate of from 5 to 20 hatchings in each year? Then think of the soiling of this same comb by generation after generation of drones, and occasionally even by the dejections of worker-bees in long winter confinements. No wonder that this comb should soak up, in a solar extractor, the slight amount of wax used in its construction.

Some bee-keepers hold that this soaking of combs previous to rendering is useless. I do not agree with them. If you dip your finger lightly into water previous to dipping it into liquid wax, it will stick to it less than if the finger were dry, but if you soak it thoroughly so that all the pores may be thoroughly moistened, the wax will not stick at all. Therefore, to render your old combs it is important that they should be moistened thoroughly.

Another advantage of thoroughly moistening the old combs is in removing a part of the coloring matter. After two days of soaking your combs will have colored the water very strongly, and they will more readily return to their original shade of very light yellow.

The residues removed from a solar extractor are always *waxy;* those which we remove from a boiler after having followed the above instructions are *muddy*, for the wax has become entirely separated from the residues.

However, another requirement must be fulfilled if we would secure as much wax as possible. Each of the cells of an old comb retains its shape even after the wax has been melted, because the cocoons of the hatched bees keep their original shape. If any of those cells are not filled with water, they may become filled with wax, in the process of rendering. To avoid this possibility, we crush them before rendering them.

Presses, such as the Hershiser, are useful but not indispensable. If you have many combs to render annually you had best own a wax press. If the quantity is limited, an ordinary wash boiler is sufficient. Let the wax rise to the top, using an ample supply of water in which your combs will melt, heat slowly and dip the wax from the top as it rises, using a screen pocket, made of a piece of wire-cloth such as is used for fly screens. Dip from that pocket, wax and water until all the wax has been removed. This crude wax poured into flaring vessels may be rendered a second time to remove the balance of the residue.

How Much Air is Needed by the Bees?

On page 190, we quoted Bienen-Vater on this. But is there not a very great difference in the amount of air needed in summer and in winter? A colony of bees, in the early spring, may be shipped 200 miles and be closed for three or four days with only such air as will pass through the cracks of the cover and of a block nailed over the entrance. The same colony in warm weather would not have too much ventilation in transit, if the entire top were screened.

What to Do With Queen-Cells

A correspondent desires to know what to do with queen-cells after they have been produced according to the plan given last August in the American Bee Journal. That's easy. Just slip them in anywhere where bees feel the need of a queen. But perhaps it may be well to go somewhat into particulars.

Ten days after the comb containing choice larvæ has been given to a queenless colony, the cells must be cut out, for if left much after that time there is danger that one of the young queens will emerge and destroy the rest. In reality, however, a queen will rarely emerge before 12 days, but to be entirely on the safe side the cells should be cut 10 days after being received by the queenless colony.

In cutting the cells, or indeed at any time of handling a frame with queen-cells, they must never be shaken, lest the inmates of the cells be injured, but if the bees are to be gotten off they must be carefully brushed off with soft grass, asparagus tops, or something of the kind.

If you have a queenless colony, a queen-cell may be given to it. If you can give it a laying queen, that is better, for if you have a cell you need not expect eggs to be laid for perhaps two weeks.

Of course, when you cut the cell from the comb you are careful to cut away enough of the comb so there shall be no possible danger of cutting into the cell. If you want to give it to a queenless colony, you must fasten it to the center of a comb right over the brood, if there is any brood present. If you have cut away enough of the comb at the base of the cell, you can lay the cell flat against the comb, with the point of the cell toward the bottom-bar, and pin it to the comb by thrusting through the base a very large pin or a wire-nail 1½ inches long. But be sure you don't thrust through the cell itself. There is no harm in mashing down the comb a little with the thumb or finger, so as to make a bed where the cell is to lie. Better than the pin or nail is a hive-staple. Let one leg of the staple be over the cell, and push the other leg down into the comb.

Like enough the greater part of your cells will be used in nuclei. So a word about making nuclei. Take from any colony two frames of brood with adhering bees and put them in an empty hive, and you have a nucleus. But you will not have that nucleus very long, at least so as to be worth anything, unless you take some precautions.

All the bees more than 16 days old, and some of the others, the first time they fly out, instead of returning to their new home, will return to the old one. Unless the weather be hot, there will hardly be enough bees left in the nucleus to keep the brood from chilling and dying. At any rate, those that are left may feel so discouraged that they will all desert the hive. The case will not be so bad if the colony from which the bees were taken be queenless. They are used to being without a queen, and so the new queenless home does not seem so bad, and they stay in it. In any case it may be well to fasten them in the hive for a time. A nucleus should have a small entrance, so as to make it safer from robbers; ¾ of an inch square is large enough. Plug up the hole when you establish your nucleus, so that no bee can get out or in the hive, and do not open it for 3 days. If the weather is hot, keep it in the cellar. At the end of that time few, if any, bees will return to their old home. They have become reconciled to their new home, and, beside that, an additional force of young bees has hatched out during that 3 days.

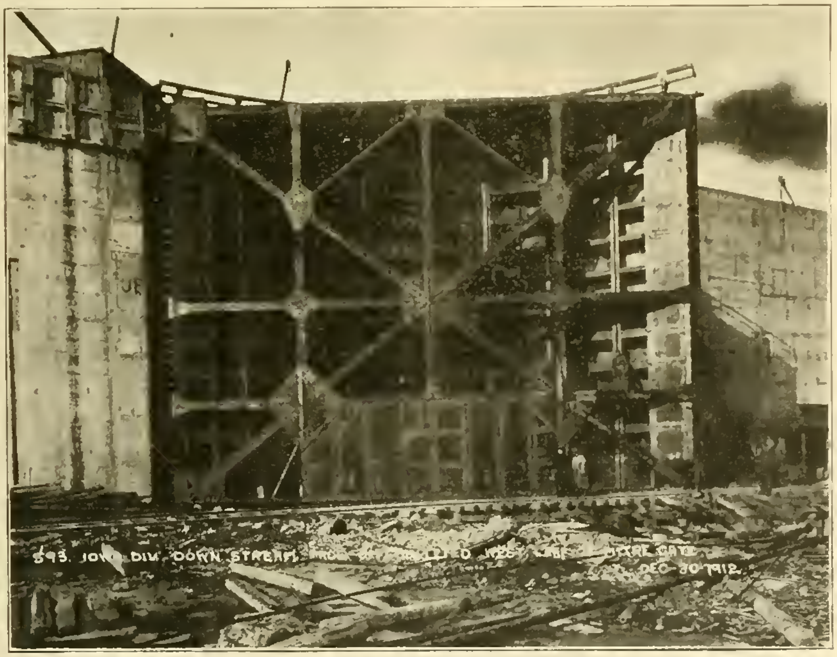
Some leave it to the bees to open the entrance. It is a good thing if there is any danger of forgetting, or if you may not happen to be with the bees at the proper time. And in any case it works well. Close the entrance by packing it pretty solidly with green grass or leaves. The bees will try to gnaw this, and between their gnawing and the drying and shrinking of the green leaves they will have a hole big enough for the passage of a bee in 3 days or so, enlarging it later. There is something about the passage being so small in the first place, making the bees squeeze their way through, that makes the bees stay better than they would if the whole crowd could rush out at once.

As a further precaution against the nucleus being left with too few bees, you may rush the bees from a third comb into the nucleus, returning the beeless comb to the old colony.

Here is another way: Instead of taking only 2 combs with adhering bees take 4 or more. The more you take the better the bees will stay. With so many you hardly need to fasten them in. Then in 3 days return all but 2 combs to their old home. You may return the adhering bees with these combs, but it will be better if you brush back into the nucleus the bees from one of them.

If the making of nuclei is for the purpose of increasing the number of your colonies, and this is sure to be the case if you are not a queen-breeder, then you might as well make them strong early. Just as soon as the queen begins to lay, if there is any honey in the field, you can make a good colony with a nucleus, by placing it on the stand of some fair-sized colony, which has a sufficient supply of stores, but is not working in the supers, and place the latter on a new spot. If you were to do this with a colony that is filling its supers, you would put an end to its surplus crop.

In this way, colonies which are not yielding either swarms or super honey may be compelled to help build up the apiary, without perceptible loss, and you avoid breeding from them.



One of the Big Lock Gates.

The Largest Electric Plant in the World

The Mississippi River Power Dam, shown on our cover page, located just opposite the Editor's home, is the largest of its kind in the world. We gave a view of it 14 months ago, while it was building. It is now completed, the last tubful of concrete having been poured on May 31, 1913, at noon, before an assemblage of people who were instrumental in having it built. It creates 200,000 horse-power and an artificial lake, now baptised with the name of the chief engineer who conceived this herculean task, Cooper. Lake Cooper is about 50 miles long, in some places 4 miles wide, and some 40 feet deep at the deepest spot.

The small cut shown herewith illustrates one of the twin doors of the lower end of the lock, which has a lift of several feet more than any of the giant Panama locks. The door weighs 600,000 pounds. The little man in light overcoat standing before it, is the genius of the work, the Napoleon of industry for whom no task is too great, H. L. Cooper.

Artificial Comb-Honey Canard

Gleanings in Bee Culture, in its May 1 number, mentions a syndicated article, by Miss Ida M. Tarbell, repeating the old story of *manufactured comb honey filled with corn syrup*. This is yet a remnant of the "scientific pleasantry" of Dr. Wiley. It has done untold harm to the bee-keeping interests, and the writer has often met people who had read this and believed it until he explained the facts. However, Dr. Wiley has done so much good by his faithful work against real fraud that we cannot hold a grudge for this thoughtless statement, made some 30 years ago as a joke. Old chestnuts keep reappearing, the more is the pity.

The original canard appeared in the 'Popular Science Monthly" in June, 1881. Although both the American Bee Journal and Gleanings have frequently offered large sums of money for proofs of the assertion made then, that comb was manufactured commercially and filled with glucose, people who have no regard for truth have continued to repeat the story.

Will Miss Tarbell take notice? There never has been such a thing as manufactured comb filled with syrup or anything else.

A Sudden Flow—Its Results—Cost of Wax

The article from G. M. Doolittle, on page 199, is worthy of a recall to the attention of the reading bee-keepers. Mr. Doolittle explains that, in a sudden heavy flow, the bees often find themselves short of room and are induced to swarm, although with plenty of empty space. Comb building does not begin until the first heavy flow has been digested by the young bees, who are at that time the comb builders. Hence, the advisability of having sections of built comb to store the first sudden flow.

The worker, as it comes from the field, finding no room for the contents of its honey-sac, must remain loaded, and therefore digest or begin the process of wax production, at the expense of the crop which is wasting in the fields. We called the attention of the bee-keeping public to this in our pamphlet on extracted honey, published in the '80's. We do not believe that there is any doubt at present, in the minds of the experienced apiarist, that bees produce wax at will, at any time when it is needed, but that they are *compelled* to produce wax, by a natural process of digestion, whenever there is a flow which supplies them with all the honey they can carry, and they find no room to store it.

More or less credence is given, in some of the European journals, to the assertion that wax costs next to nothing to the bees, and that it is proven by the fact that a newly-harvested swarm builds such a large quantity of comb shortly after being hived. The people who write this are overlooking the fact that the bees of a swarm are in most cases in the process of wax producing. Many of them have already consumed a large quantity of honey, which has undergone the transformation, so that the weight of a swarm is not a criterion of the quantity of honey necessary to produce the wax. If we could separate all the wax scales already about to emerge from their abdominal rings, we would be able to more accurately tell the actual cost of the combs. To make a certain test, it would be necessary to secure bees that had empty stomachs, feed them and hive them at once. This is the only way in which we could approximately ascertain the cost of wax.

The cheapness of wax production in a time of abundance is only apparent but not real. If it appears cheap to the swarm, you may be sure it has been expensive to the mother colony. In other words, the mother colony, previous to the departure of the swarm, must have suffered for lack of room long enough to compel all the bees to stock themselves up so as to be loaded with both honey and wax ready to emerge. That is why, in times of plenty, the swarm often leaves a piece of built comb attached to the limb upon which it has hung a few hours.

Do not let us deceive ourselves. At best, wax costs the bees probably as much feed as fat does in cattle or in hogs.

Can Worker-Bees Mate?

The May number of L'Apicoltore, in its "Questionario," records the mating of a worker-bee with a drone. Whether this instance has been verified or not, two or three cases of this kind are on record. But they prove only that the atrophied organs of reproduction of the worker are more or less existent. Some persons doubt the existence of drone-laying workers. We have seen them by the dozen in hopelessly queenless hives. We saw them lay eggs under our eyes. If the organs of reproduction of a worker should accidentally be sufficiently developed to admit of copulation, the imperfection of her ovaries would render this monstrosity worthless, except as a curiosity.

Bee-Keepers' Review for June

The Review for June is at hand, and we must congratulate friend Townsend, the new editor. He makes a magazine in every way as good as ever.

MISCELLANEOUS NEWS ITEMS

Bee-Laws of Idaho.—This is the title of a small pamphlet sent to us by J. E. Miller, of Homedale, Idaho, inspector of the 7th district. The State Horticultural Inspector is ex-officio bee-inspector. Deputy inspectors are appointed by him upon the petition of any bee-association or of three bee-keepers, in counties where it is deemed necessary.

In this State, as in Texas and a number of other States, it is rendered compulsory, upon request of the bee-inspector, to transfer colonies of bees from box-hives or immovable frame hives to movable frames.

It is also made compulsory to have bees examined when brought into the State. The amount of expenditures on bee-inspection is limited to $2500.

Sooner or later we trust, some universal law, applicable in every State in the Union, will be passed on this matter. Meanwhile we are progressing in the right direction.

◆

Eastern Illinois Field Day Meet.—The second annual Field Day of the Eastern Illinois bee-keepers, will be held in St. Anne, Tuesday, July 8. All bee-keepers are cordially invited. In the afternoon the meeting will be held in my yard "among the bees," where practical bee-men will demonstrate and explain foul brood; manner of dividing; shook swarm; best method of finding the queen, and many other questions.

An evening session will be held in a room of the State Bank Building. Let this be a good gathering of mutual interest and benefit to all.

H. S. DUBY, *Sec.*

G. T. WILLIS, *Pres.*

◆

A New Inspector for Michigan.—We understand that Mr. F. E. Millen, formerly of the Ontario Agricultural College, has been appointed inspector of apiaries for the State of Michigan. With a man of his calibre as inspector, Michigan should progress even more than it did in the last few years.

◆

Tennessee Bee-Keeping.—According to the annual report of the Tennessee State Apiary Inspector, there are at present 300,000 colonies of bees in that State, a large proportion of which are still kept in the old-fashioned "gums."

With an appropriation of only $1000, Dr. Ward has done a great deal for the betterment of bee-keeping. During the season he gave a series of lectures, throughout the State, illustrated by slides, and dealing not only with brood diseases, but also with betterment of bee-keeping in other lines. The inspector estimates that the flora available in Tennessee could produce a revenue of $2,000,000 per annum, while the annual output at present is but $25,000. He urges a larger appropriation in order that modern bee-keeping may be taught systematically.

◆

COMB BUILDING.

Official Recognition of Apiculture.—The bee-keepers of Europe seem to have still more trouble than we of the United States in getting recognition at fairs and in educational ways. In the "Abeille de l'Aisne" for May, and other magazines, we read a letter addressed to the French Minister of Agriculture, by a noted apiarist, Mr. Alin Caillas, asking that the bee-industry be not rewarded at fairs with only "medal diplomas," but real medals in gold, silver or bronze, similar to those given to other agricultural branches. We offer our congratulations to our brothers across the Atlantic, for this action.

◆

Do the Dadants Keep Bees?—An inquisitive bee-keeper lately wrote us that he knows we publish a bee-journal, and that some of the family manufacture comb foundation and handle bee-goods, but he wonders whether we keep as many bees as when the great-grandfather lived.

We have 7 apiaries, with over 500 colonies, over 450 spring count. We have 900 large Dadant supers being filled with white clover honey, and 100 more being put on (June 20). The first extracted honey of the season—4 barrels—was taken off June 18. The work is not done by proxy, some of the family look after it, with help of course.

Mr. C. P. Dadant, the senior, and his wife, are on their way to Europe, and will land long before this magazine reaches all its readers. Their only regret is to leave so much work for the rest of the family to do. But to see the bees of Switzerland and Italy one must be there at the proper season.

After August, we will publish letters from him regularly.

Smoking Bees When Cellaring. — A man by the name of E. S. Miles advocated smoking bees to quiet them when putting them in the cellar. In the American Bee Journal for May, I tried to show him the error of his ways. Instead of being quieted down as a respectable colony of bees should be when properly smoked, he comes back at me in the following fashion:

Dr. C. C. Miller, Marengo, Ill.—

Dear Friend:—I have just read your comment on "Smoke in Bee-Cellars," in the American Bee Journal for May. I was expecting some novice to get scared about smoke so used, but hardly expected a half century veteran to do so; I suppose because I am myself so confident of good results.

"If, however, Mr. Miles has some *proof* for his belief." Well! well! do you work out any process or manipulation until you feel absolutely sure you are right, and then try to add further proof? Why, bless your heart, I wintered bees for years before I ever thought of smoke in that connection, and had perfect success too, yet I gradually found that I could *save time* in cellaring by using smoke, and I went slowly until I *knew* no injury resulted. What you say about over-much smoke in summer sounds plausible, and I do not doubt it, but I do not find any thing of the kind in cellaring.

A great many colonies will go into the cellar without smoke quietly enough, but occasionally a colony, a strong hybrid one for instance, gets on its "fighting clothes," and the odor or sound, or something, has a tendency to arouse up others, besides the annoyance and sometimes loss of bees coming out. So I like smoke, and since it does no harm, I use it on all.

I have three covers, and I really think I have the wintering problem solved. If there were any damage in the smoke I feel certain I would have observed it. Try some on 2 or 3 colonies next winter; that is, set them near the cellar, and smoke them just enough to keep them from offering offense, and do it every few minutes while you carry the others in. See then whether you can detect any damage to those the next spring. I said not to smoke enough to run them off the combs, but enough to keep them from *coming out.*

I must disagree with some as to smoke in *spring.* I don't use it then. I tried it on one cellar this spring, but it aroused the bees so much that I closed that cave and went to another, and set 60 or 70 colonies from it without a bit of trouble; then later when the first cave had quieted down we finished that without smoke, and they were perfectly quiet. I have a smoker handy outside, so in case I accidentally jar a hive, I use a little smoke until I get to the stand.

A "Bee Gum."

So, Doctor, my only *proof* is like 'the proof of the pudding;' some say, 'chewing the string," wintering a large number of colonies for 8 or 10 years *without* smoke, then using it more or less for 8 or 10 years, and if there is a damage it is too slight for my observation.

We are having lots of rain, and have an immense stand of white clover.

E. S. Miles.

The fact that Mr. Miles has practised smoking his bees for a number of years and has seen no harm from it is hardly proof that no harm occurred. He says to try 2 or 3 colonies, smoking them a number of times when taking bees in, and see whether any harm can be detected the next spring. Now if he had said he had done that thing and could see no harm, there would be some proof in it. And if I should try it, and found those colonies the only dead ones the following spring, he might consider it some proof that smoke was not the most wholesome thing for bees when being cellared. It so happened that last fall, when the men were carrying the bees in cellar, the bottom-board of No. 75 was not fastened on, except by bee-glue, and dropped off. The hive was set down in the most gentle manner, and I had to use quite a bit of smoke in stapling on the bottom-board. I did not note No. 75 at the time of taking out of cellar (I didn't have this discussion in mind at that time), but upon looking at my record-book I find that No. 75, at time of first overhauling, was a good, strong colony. I hardly see any good way of crawling out of this affair, unless I say that this was not a clear case of smoking, but had the hammering added, and that the hammering neutralized the smoking.

Mr. Editor, let me whisper in your ear that I may try smoking a few next time, but please don't say anything to that man Miles about it. I hate to have people crowing over me. C. C. M.

False Statements Concerning Comb Honey. — The mention made in this number of the American Bee Journal of misstatements concerning the purity of comb honey led us to look up some former misrepresentations on this subject. In the Record-Herald, of Chicago, of March 15, 1908, Marion Harland spoke of honey-comb "made by the bees themselves instead of the artificial combs of paraffine now manufactured." To this statement we sent a polite but firm protest, explaining that the bees will not accept combs made of paraffine, and that all comb honey on the market is pure. This was very courteously noticed with a correction in the number for March 22 of the same year.

This goes to show that writers do not purposely misrepresent, but that they are prone to accept the statements of other equally uninformed writers for publication. When you read misstatements about bees, by all means insist on their being corrected. If you go at it right, you will obtain redress.

Texas Inspection Law.—The inspection in Texas is in charge of the State Entomologist. His employing of assistants and deputies for this work is subject to the approval of the Board of Directors of the Texas Agricultural Experiment Station. He has power to make such rules as he deems necessary and to prevent the importation into the State of any bees, honey, etc., capable of transmitting disease. Such goods must be accompanied by a certificate of inspection from the Inspector or Entomologist of the State whence they come. Are excepted from this regulation shipments of live bees in cages when without combs or honey.

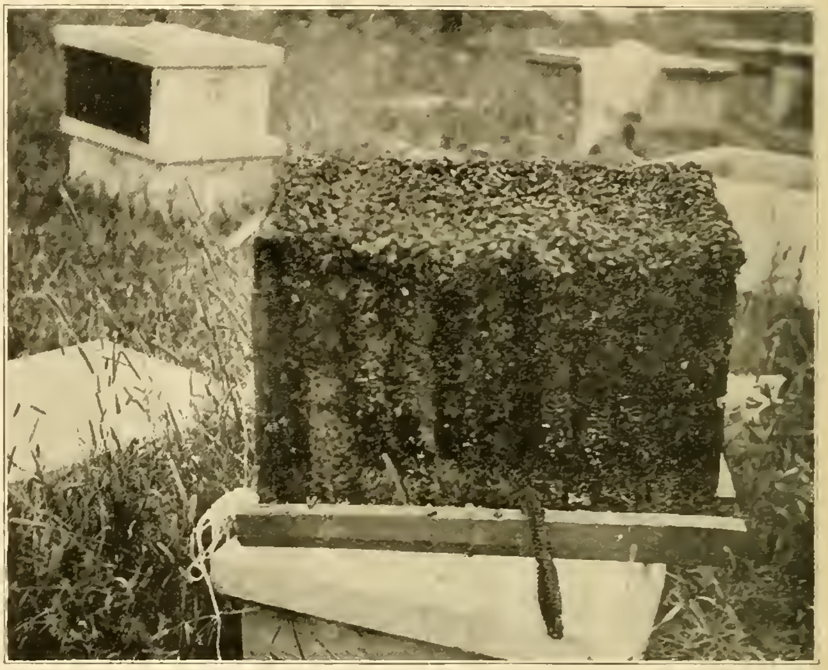
Quarantines may be established on bees from any infected districts. Queen bees must not be sold or offered for sale unless accompanied with a copy of a certificate, showing that the apiary has been inspected within the twelve months, and was found free of disease.

Power is given the Inspector to compel the transfer of bees from immovable comb hives to movable frames. (This regulation, which looked at first tyrannical, is becoming popular the world over.)

Fines of from $25 to $200 are imposed upon violators of the law.

Copies of the law may be obtained by addressing the State Entomologist W. H. Newell, College Station, Tex. The above is only a very much abridged synopsis.

Co-operative Selling.—The Zurich Bee-Keepers' Association has for 20 years past been selling its honey to the Zurich Co-operative Consumption Association. The sales which were at first of 3500 pounds (1600 kilos), reached last season the amount of 18,500 pounds value at 17,000 francs.—*Swiss Bulletin.*



The Gum Torn Apart.

Out of the "Gum" Into Modern Quarters.

"Bee-Keeping in Iowa."—That's the title of Extension Bulletin No. 11, issued by the Iowa Agricultural College. Frank C. Pellett, State Inspector, wrote it, and he did a good job. It is a solid bulletin, conservative in tone, and will do good.

Mr. Pellett frankly says he uses 8-frame hives, but would use 10-frame if he were starting over again. He correctly advises the beginner to start in a small way. He cites D. E. L'Hommedieu, an old apiarist, who began with one colony and increased to 500 in a few years. Disasters are less likely when the novice starts on a small scale, for he learns as he goes.

After considerable investigation, from 40 to 50 pounds of extracted honey per colony a year is considered a dependable average in the hands of an expert in almost any part of the State. Some record yields from single colonies are given, in which F. W. Hall leads with 290 pounds of comb honey. Average yields per colony for the whole apiary in an unusually good year are given from nine bee-keepers, ranging from 75 to 173 pounds. This last from the veteran queen-breeder, J. L. Strong. If, however, the 173 pounds be extracted, then Dr. A. F. Bonney leads with 150 pounds of section honey.

"In moving bees a short distance," Mr. Pellett says, "I put over the new hive a large box that has a board off near the ground. This gives the bees such a decidedly different impression in leaving the hive that there is little trouble from their returning to the old stand."

No doubt any Iowa bee-keeper can obtain the bulletin free by addressing Agricultural College, Ames, Iowa.

◆

Death from Bee-Sting Scientifically Explained.—While gathering mushrooms at Kirdford, Sussex, England, where he was spending his vacation, William Mortimer Rhind was stung on the forehead by a bee, and in half an hour he was dead.

The medical verdict is that death was the result of a shock, Mr. Rhind, ever since he was a lad, having had an abnormal dread of bees. He was severely stung by one when at school.

A well-known physician, and an authority on nerve troubles, says the verdict was most probably correct.

"To men and women of a highly sensitive temperament, and with a predisposition to fear certain specific dangers," he said, "the effect of shock is often attended by serious and, in some cases, fatal consequences. Some lose their reason, and I have known women under certain conditions to give birth to children who bore on their bodies marks of the very thing that produced the shock.

"As in the case of the unfortunate man who died from the shock caused by the sting of a bee—for which he felt a strong aversion—I know of one of the most distinguished generals in his Majesty's army—a household word, in fact—who hates cats, and trembles when one springs on his knee. Others cannot endure the sight of blood, and it is an established fact that soldiers have been literally frightened to death by their first vision of the carnage of battle.

"Then the sting of a bee is peculiarly penetrating and irritating. From slender, horny barbs poison is discharged which is said to be composed of mischievous and pungent acids.

"The sting itself consists of a sharp-pointed tubular instrument, and I can easily understand that when it suddenly pierced the man's forehead the effect on a weak heart would be collapse."—*Exchange.*

◆

Iowa State Fair Premiums for 1913.—Incorrect information has been going the rounds of the Iowa press concerning the premiums to bees and bee-products at the coming State Fair. Class No. 110, which represents this industry, offers $411 in premiums; 66 prizes are offered on 22 different entries. Twenty dollars is given as first premium for best display of comb honey, not less than 300 pounds. The same amount is offered for best 100 pounds of extracted honey. The largest and most attractive exhibit in this department is given $25 as first premium; second, $15; third, $10.

A well prepared exhibitor could easily carry away $150 if he took the greater proportion of the first prizes. It is worth trying for.

◆

An Aged Bee-Keeper.—"Judging from the great number of bee-keepers who, like Dzierzon, Langstroth and Chas. Dadant, have lived to an advanced age, one may believe that the practice of bee-culture prolongs life. We now hear from Sailly-La-Bourse, in Artois, of a bee-keeper 102 years old. Father Saileux, they say, still occupies himself with his bees."—*L'Apicoltore* for June.

◆

Honey Imitations.—In the "Abeille de l'Aisne" already mentioned, we read a protest against the French law, which permits manufacturers of syrups and sweets to offer mixtures containing only a small proportion of honey under the name of "miels de fantaisie" (fancy honeys). They say, and they are right, that nothing should go under the name of honey which is not a substance produced by honey-bees through the trans-

"I Extended a Friendly Hand and They Reciprocated Cordially."

formation of sweet juices gathered upon plants and stored in their combs."

◆

The Burbank Society.—A great honor has come to me. I have been notified that I'm eligible to become a member of the Burbank Society, which admits of only choice specimens of humanity like myself. And it costs only $150. Could one of you kindly loan me $150?

Later.—I've just learned that a man as common as A. I. Root is allowed to be a member. Also that, instead of $150, it costs $151—a dollar more than I can afford. I think I'll not "jine."—Dr. Miller, in *Gleanings*.

The Dadants have also been offered that unusual honor. Reads just like a fake. Wonder whether Luther Burbank himself knows what is being done under cover of his reputation. His name is used, and the solicitations come from his home town, Santa Rosa, Calif.

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Colorado Inspection Law.—The Apiary Inspection law, passed by the Colorado Legislature, will take effect about Aug. 1, 1913. The new law provides for the appointment of county inspectors by the county commissioners upon petition of 15 bee-keepers. The appointee is then examined by the State Entomologist, and if he proves competent, is issued a license as apiary inspector. All bee-keepers should interest themselves in the provisions of this law.

Write to Wesley Foster, State Apiary Inspector, Boulder, Colo., for full particulars and suggestions on the manner of carrying out the inspection under the new law.

The law prohibits the spraying of fruit-trees while in bloom, with any spray injurious to bees.

The inspector is empowered to order the transfer of bees from box-hives or hives with immovable combs.

It is hoped the bee-keepers will secure every aid possible from the operation of this law.

By getting your inspector appointed, examined, and a license issued to him, he can begin work this season and get considerable done before fall.

Wesley Foster.
State Apiary Inspector.

BEE-KEEPING FOR WOMEN

Conducted by Miss Emma M. Wilson, Marengo, Ill.

Some Uses of Honey

The following two recipes were taken from the Chicago Record-Herald:

Parisian Paste.—If soap irritates your skin, try this dainty paste—some women prefer it to soap: White soap, powdered, 20 grams; honey, 25 grams; gum benzoin, 5 grams; spermaceti, 5 grams; storax, 5 grams. Beat the ingredients in a china bowl until they form a paste, then dry by slow heating. This is delightfully cleansing.

Hair Brightener.—Steep equal parts of honey and rhubarb stalks in three parts of white wine. Let the mixture stand for a day and a night, then strain it carefully and use.

It is not difficult to apply. Simply wet the hair and scalp with the lotion, massage for a moment, then leave it to dry in. This lotion generally brightens light-colored hair effectively.

Honey Blanc Mange.—Half a cupful of honey, four heaping tablespoonfuls of cornstarch, a quarter of a cupful of

Just to See What They Look Like.

cold milk, two cupfuls of boiling milk and a pinch of salt. Moisten the cornstarch with the cold milk, then add the boiling milk and stir until it boils for eight minutes, then add the salt and the honey. Divide into small wet molds to cool. Turn out, sprinkle a few chopped nuts over the top and serve with cream.—*Ladies' Home Journal.*

There Was a Reason

She drank the fragrance of the rose,
That she held closely to her nose.
Away she cast it; so would you;
She found a bee was drinking, too.
—*Exchange.*

Newspaper Plan of Uniting Modified

The newspaper plan of uniting bees, which originated "in this locality," has come into pretty general use. It is safe and easy. But if the number of bees in each story be so small that one story would contain both lots, it would be a great advantage if there were some plan by which they could be safely united in the one story, thus making them warmer, and saving the trouble of changing into a single story later on.

It sometimes happens that you have a weak colony in the spring that you wish to strengthen, or two colonies that you wish to unite, that you can get into one story. Suppose a colony in the spring has only two frames of brood. It has a good queen and you want to strengthen it, and would like to give it four frames of brood with adhering bees, making it into a fairly strong colony at once. You may fear such a strong force of strange bees, with so few of her own, might endanger the queen's life.

We have hit upon a plan by which you can give such a weakling as many frames of brood with adhering bees as you can get into one story without endangering the queen. Sounds like a fairy story. We have never had a queen hurt by it yet. It is merely a modification of the newspaper plan.

Go to your colony with only two or three frames of brood, and remove all combs but those containing the brood. Put two or three frames of brood with adhering bees and queen at one side of the hive. Take a good sized sheet of newspaper, cover it over the top, down the side of the frame, and along the bottom of the hive. That shuts the brood, bees and queen of the colony into a compartment by themselves, and leaves a larger compartment entirely separated by the paper. Into this put as many frames of brood with adhering bees as you like, or until the hive is full, being careful not to break through the paper. Close up the hive, and the next time you open it, whether it be in two days or two weeks, they will have gnawed the paper away, and become a peaceful and united family.

FAR WESTERN BEE-KEEPING

Conducted by WESLEY FOSTER, Boulder, Colo.

Have You Noticed It?

One of our locations has the irrigated area on one side and dry land on the other. Over the irrigated area the dandelion bloomed very profusely in May. The dry land had an abundance of other bloom, but the bees would not touch it while the dandelions were furnishing nectar. It seemed to take the bees several days to find out that there was nectar to be gathered on the other side. At least there was a lull of several days between the time the bees quit securing nectar from the dandelions and the nectar from the dry-land flora began showing in the hives.

Bee-Keeping Advancing

Some of us have been experimenting with the vain hope that some day we might see the development of a bee that can carry a thimbleful of honey at a load, or perhaps a flower that will well-nigh drown the bees in the abundant nectar secreted. But the prosperity of the industry does not wait for this hope to be realized. The improvement of the tools of the bee-keeper seems to indicate the growth of the industry; the steam-heated uncapping knife, the capping melter, and improved extractors. And now it seems quite probable that Mr. Ferguson will soon be able to furnish us with a practical uncapping machine.

The automobile is going to make possible the operation of fully twice the number of out-apiaries for the alert bee-keeper. I believe that within a few years it will prove as valuable for the bee-keeper's use as the honey extractor. Once the bee-keeper with 200 colonies or more tries a machine he will no longer do without.

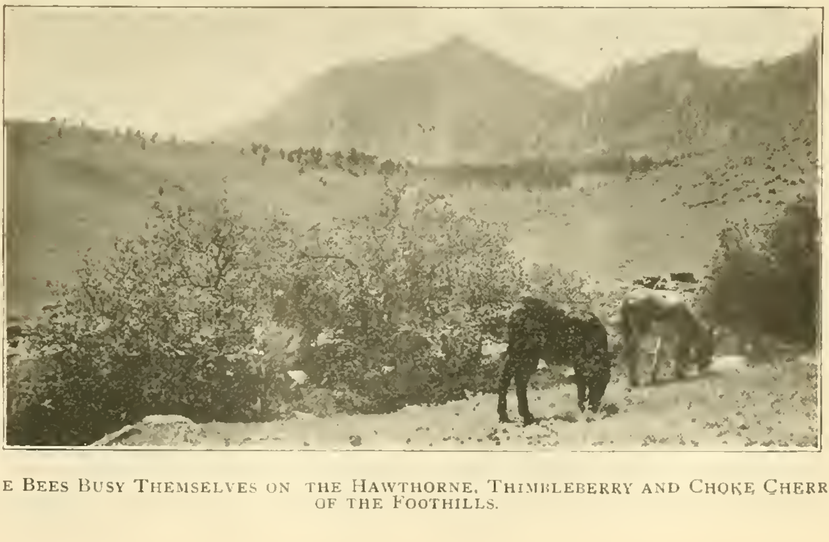
Another factor is the improvement in our distributive system. The American people have awakened to the fact that expensive distribution is one of the causes of the high cost of living, and means are being found, and will be developed, for delivering produce to the consumer at a very small percentage of the value.

One of the main desiderata of specialization in the West is for the bee-keepers to co-operate in buying supplies and in selling honey. The bee-keeper who spends half his year in disposing of his crop cannot succeed as well as the one who sells his crop in a lump. I believe this is one of the reasons why the western States have more specialists than some of the eastern and central States.

Side-Lights on the Alexander Plan of Increase

We have made somewhere over 100 colonies increase during May by the Alexander plan. It has not been an entire success, but the failures, where there have been failures, have been caused by seasonal conditions. We have been trying to rear our own queens, and the weather has been so cool, especially the nights, that we have not been able to get many. We have had several cases where the queen, of this year's rearing, went back and forth through the excluder, but not enough bees went above with her so that she could do as well at egg laying as the queens which were placed below the excluder with the brood above.

Only a small proportion of the colonies, where the brood was above, built cells, so that some of those had to be given young larvæ a week or ten days after the brood had been placed above the excluder. With a few that did not build queen-cells, and we had no cells to give them, we set off the excluder and gave a comb of young larvæ. Instead of placing these set off hives entirely on a new stand, we removed the lower hive a half width over and set the top hive on a bottom-board beside



THE BEES BUSY THEMSELVES ON THE HAWTHORNE, THIMBLEBERRY AND CHOKE CHERRY OF THE FOOTHILLS.

the first, in order to catch part of the working force in our new colony.

We have been able to prevent some swarming by taking out two frames of brood and replacing with drawn combs or full sheets, giving these frames of brood to colonies that have been shaken for foul brood ten days previously. A colony treated for foul breed needs encouragement as soon as it is safe to give assistance, and this is why we did it.

It Should Not Be

One of the most disheartening things to a bee-keeper is to go through the country and see here and there empty hives piled up; the most populous apiaries entirely wiped out with foul brood, poor seasons, or poor wintering. I have known of several very nice outfits of bee-keepers' supplies sold for a song. In several instances as much as half a carload of nice goods, little used, sold at $20 to $50. While the bee-keeper who buys these outfits makes the profit, this does not do credit to the industry, and it is a condition that need not be. There are a number of localities in Colorado where outfits of this kind can be picked up very cheaply, although there are not so many now as two or three years ago. In some other places in the West bees and bee-supplies are needed, and command fair figures. If the bee-men who dispose of their supplies at ridiculously low figures, would read the bee journals, they would realize that they could easily find a buyer for such supplies as they cannot use.

SOUTHERN BEEDOM

Conducted by Louis H. Scholl, New Braunfels, Tex.

Making Rapid Increase

Ordinarily, bees increase fast enough by natural swarming, even within the limit of one good swarm to each colony inclined to swarm, as there are always some colonies that do not swarm. The desire of the experienced bee-keeper is to prevent swarming, rather than to allow the bees to increase this way. If increase is desired, it is made artificially, by dividing strong colonies, at a time, usually after the honey-flows are over, when this will not interfere with honey storing. Increase should be made slowly, and it is not wise to more than double the number of colonies in a season. The stronger in bees each division is, the better they will progress.

The most common method is that of forming small colonies or nuclei, by taking two or more combs of hatching brood, honey and adhering bees, and putting these in a new hive on a new stand. A ripe queen-cell should be given, or, better, a laying queen, as it is not advisable to permit any but very strong colonies to rear queens. Besides, the nuclei will progress more rapidly if no time is lost waiting for a new queen to be reared.

A few bees shaken from three or four combs from a strong colony and placed in a hive supplied with two or three combs of hatching brood and honey, and provided with a queen or ripe queen-cell, will build up to a strong colony, if properly cared for. They should be helped from time to time by adding to each a comb of hatching brood and honey, or by feeding them, if necessary. Properly handled, such nuclei will not only be strong enough for the winter, but may gather some honey before the season is over.

When conditions are favorable and there is ample time in which the colonies may be built up for the honey harvest, all strong colonies may be divided equally, and two colonies made of each one. One-half the combs, bees and brood are placed in a new hive. The remaining space is filled with frames containing full sheets of foundation. The old hive, with half the combs, bees and queen, is then moved to a new place in the apiary. The new hive is set on the old stand and the bees may rear a queen, or better, have one supplied to save loss of time.

One of the best forms of increase is secured by shaking or "swarming" the bees artificially. In this way the number of strong colonies can be easily doubled. If only one-third increase in number is desired, most of the bees from two colonies standing close together may be shaken in front of a new hive, placed about midway between the two, and the old colonies removed to new stands.

Bees may be rapidly increased by dividing a strong colony into a number of nuclei. This is accomplished by putting one comb of brood, honey and bees together with a comb taken from some other colony, in each of as many hives as there are such combs to supply them with. If possible, a caged laying queen should be given to each division, except the one having the queen of the original colony. Otherwise ripe queen-cells should be given.

If such colonies are deprived of their queen a few days previous to the division, better results will be obtained, as queenless bees will remain, when placed on a new stand, much better.

One of the best methods for securing these results, and at the same time excellent queen-cells for rapid increase, is to collect eight of the best combs of hatching brood from a number of strong colonies and place them in a 10-frame hive, so that the space will be left in the center of the hive for another comb. This comb is supplied from one of the best colonies in the yard, from which queens are to be reared. It is previously prepared by placing it in the hive three days before the increase is to be made, so that it will be well supplied with eggs just ready to hatch, and of the right age, when placed in a queen-cell building colony.

The hive thus prepared is placed on a stand of a very strong colony, which latter is removed to a new stand. About a quart of bees from the strong colony is shaken in front of the new hive, care being taken not to shake the queen with them. These and the field bees will make a powerful colony to take care of the brood, and thus supplied with hatching bees, the nucleus is in the best condition for the building of a large number of queen-cells, in which the larvæ are supplied with an abundance of royal jelly, produced in large quantity by the young nurse-bees. This method is one of the best for producing large and valuable queens.

Just before the queen-cells are ripe, or ready to hatch, or about ten days from the time the colony was made, as many hives are prepared as there are combs containing honey and brood, and the entire colony is divided into nine nuclei, as already described. One of the best queen-cells, carefully cut from the comb containing them, is placed on the side of each brood comb, in each nucleus, by pressing a hollow place with the finger and laying the queen-cell so that its lower end will hang downward, or in the natural position, and a bent wire staple is stuck over the cell and through the comb on either side of it to hold it in position. The two combs are then pushed together as closely as possible, and the nuclei carefully carried to the stands they are to occupy. Care should be taken to have about an equal share of bees in each of the nuclei, and nearly all the bees from the one remaining on the old stand may be placed in the nuclei to be taken away, as the bees that return will still leave the strongest nucleus on the old stand. The entrance to each nucleus hive should be tightly filled with green grass or weeds to prevent many of the old bees returning to the former location, and at the same time to prevent robber-bees from destroying the nucleus.

Another excellent way, especially when shallow supers are used in addition to the brood-nest so brood may be reared above, is to slip a queen-excluder between the super and the brood-nest of each strong colony that has a sufficient amount of brood in the super, taking care that the queen is below. About ten days later, when all the brood is sealed, these supers are lifted off and carried to the new location in the apiary, where a bottom-board, to receive them, has already been placed on a stand. The entrances are then immediately closed, with green grass or weeds, to prevent the bees from returning to the old hive. At the same operation a ripe queen-cell, or, better, a caged laying queen is given to each of these nuclei, and they build up into prosperous colonies.

The secret of the method is in excluding the queen from the super so that there is mostly hatching brood and no young larvæ to starve when the supers are removed. In this way, much increase can be made from time to time throughout the season, without materially depriving the old colony of its strength for storing honey.

BEE-KEEPING IN DIXIE

Conducted by J. J. Wilder, Cordele, Ga.

Honey Market and Prices

There has been a great crop of honey produced, but most bee-keepers are not in touch with the market. We have no great honey market or honey dealers in the South, consequently we have to ship to northern markets or try to develop our own, which is by far the best thing to do. Any first-class grocery store will take honey, if it is properly packed. Much can be sold in this way, if the grocers be allowed time to dispose of it. If this cannot be done, wholesale grocers will take it and place samples in the hands of traveling men, with the command to push it, but as these men are jobbers, we have to make them jobber's prices. The most of them represent reliable firms, and but little loss will occur. In the long run, this is the way to dispose of a crop.

Any of our cracker factories will take an off grade of extracted honey at 5 and 6 cents per pound. Jobbers usually pay from 7 to 8 cents per pound for extracted honey, plus the price of the cans or jars. Comb and chunk honey sell for 9 and 10 cents per pound, and the wholesale trade from 1 to 2 cents per pound more.

The Caucasian Bees Highly Praised

"Mr. Wilder:—I have tried many different races of bees, and I am not yet suited, but I have one colony of Caucasians that come the nearest to my ideal. They have many good points. The queen keeps so much brood in the hive all the time, and yet the bees are not inclined to swarm."

Spencerville, Md. H. V. Black.

"Mr. Wilder:—I bought some Caucasian queens about 3 years ago. I do not think, they were pure stock, but mixed badly with Italians. They were always crowded with brood and honey, but that was not the case with the Italians." Juan M. Curnow.

Palmer Soriano, Oriente, Cuba.

The Caucasians are praised by those who have tried them. Many bee-keepers are adopting them in preference to other races. There are several vital points in their favor. I adopted them, and have more than 1000 colonies. My bee-business was once at a critical point, so far as stock was concerned, and I would have had to "call a halt" had I not had Caucasians. Their good traits made it possible for me to continue spreading my business, and do so at a profit.

Modern Hives Best

"Mr. Wilder:—I have until recently been an "old timer" in bee-keeping, but I find the modern movable-frame hives the proper kind, and I am getting cranky over my little 'pets.'"

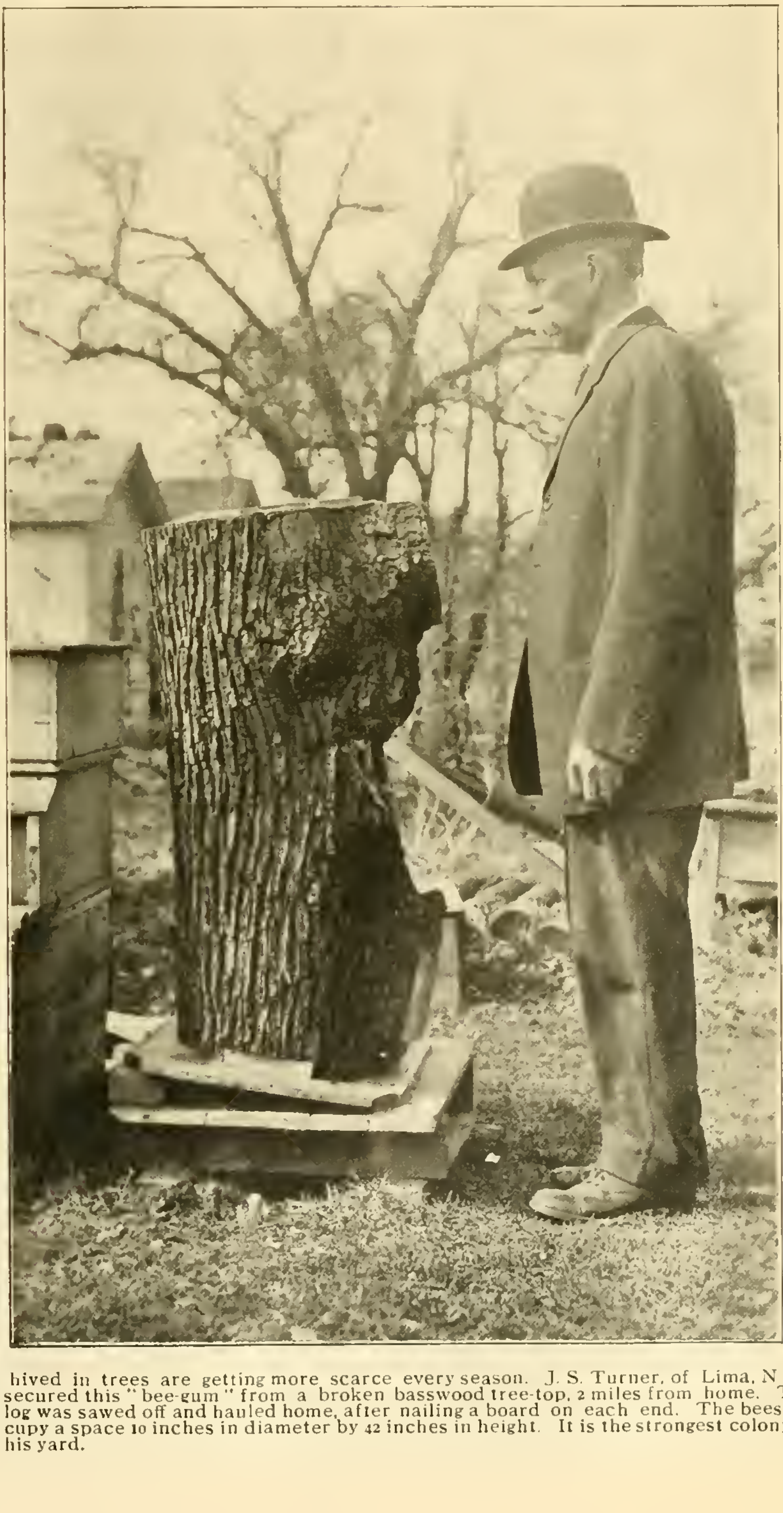
Lawrenceville, Ga. J. A. Smith.

Crude hives with no conveniences are still prevalent in the South, simply because those who have them do not believe it would pay to use anything else. This is a great mistake our friends are making. When once induced to invest a few dollars in modern conveniences, the bee-keeper is fully convinced. Right here lies the greatest field of work for our promoters.

Apiary Work

There is very necessary apiary work to do at this time of the year. The spring honey crop is over in most sections, and all the surplus honey should be removed as early as possible and marketed. The bees should be made ready for the next honey-flow, which will be on in about 30 days.

By closely examining the brood-nest



Bees hived in trees are getting more scarce every season. J. S. Turner, of Lima, N. Y., secured this "bee-gum" from a broken basswood tree-top, 2 miles from home. The log was sawed off and hauled home, after nailing a board on each end. The bees occupy a space 10 inches in diameter by 42 inches in height. It is the strongest colony in his yard.

of each colony in the apiary at this time, you can nearly tell what the bees will do with the approaching honey-flow, and what colonies will do the best, by the amount of bees and brood.

A large well-filled brood-nest now means a good harvest, but a nest with a small amount of brood scattered in it and not a great army of workers will mean a slim harvest. The queens in such colonies had better be looked up or their records examined, and good judgment used as to whether you should keep them or supply such colonies with young vigorous queens of your own rearing or purchased from some good breeder. A good queen at this season of the year with some nectar and plenty of pollen coming in, will not allow her brood-nest to become very much reduced even after a long egg-laying period, but a queen that is laying scatteringly over her nest is most apt to be on the decline.

Very often a good queen will almost cease laying at the close of the first honey-flow, but she will soon start again as she did in the spring.

With these suggestions you can easily tell about what you have in the way of queens. At this season of the year don't take too closely from your bees, even if there is little coming in. See that each brood-nest has the usual amount of honey around it, and if it has not, supply it. If short of honey the colony may economize too much and not rear enough young bees. With plenty of stores present they would rear a great amount of bees.

It is best to leave them a few unfinished combs in the first super for encouragement or as a starter. The best bee-keeper I ever had the pleasure to visit produced extracted honey, and during the season kept two or three frames of honey in each super. I asked him why he did this, and he stated that if he removed it all at the close of the first flow he would not get any more, but if he left a little, he would always get a little surplus during a long season, when there was not much nectar for bees to find. All empty supers should be cleaned and kept ready for the next flow.

CANADIAN BEEDOM

Conducted by J. L. Byer, Mt. Joy, Ontario.

Conditions Not Very Favorable

In the June issue of the American Bee Journal I mentioned the fact that the season was abnormally early, and that we feared a frost might come and hurt the early fruit bloom. The frosts came, not heavy enough to damage the blossoms; but the last four weeks the weather has been so cool that the season is now no earlier than usual. With no rain and cool weather, growth has been slow, and the prospects for clover are not so good as when I sent the notes for June. Bees gathered just enough in most localities to keep brood-rearing going nicely, but the cool nights caused the bees to crowd the brood-nest, with the result that there has been early swarming even if practically no nectar has been coming in.

During early willow and soft maple bloom, the weather was very favorable, and in localities where these trees abound, the bees received a tremendous impetus, and are much stronger than where there are practically none of these trees. In two of my apiaries we have very little early spring feed, and in both of these yards the bees are behind all the others.

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Superseding

On page 206 of the June issue, I note that Dr. Miller allows his bees to do their own superseding, and while there is a certain amount of comfort as expressed in the old saying, that "misery loves company," in learning that so well known a bee-keeper as Dr. Miller does as I have been doing in this matter, nevertheless I frankly confess that I am not satisfied with the plan, and would gladly do differently if I had some simple plan of requeening and being sure that most of the young queens would be all right. Of course some will say, "Rear your own queens." This is good advice, yet I do not find the time for this work when the requeening should be done. I would gladly buy all my queens—indeed, I have been doing it for a few years, but for some reason that I cannot understand, such a small percentage of these queens last over six months, that I am discouraged.

Whether it is because I have bought more, lately, and pay more attention to these losses than I did formerly is a question, but I think that a higher percentage are superseded than was formerly the case. It is discouraging to go to the trouble of hunting out a lot of queens in August, have others introduced safely and wintered well, and find 75 percent playing out between April 1 and June 1, the colonies with these queens being a total loss so far as surplus for the season is concerned. This is my experience just at present. While I cannot understand the matter at all, it convinces me that there is something to learn yet in rearing queens in a commercial way.

The claim of the queen-breeders is that the mails injure the queens. As to that I cannot say, but this I do know, that a large consignment of queens in nuclei were shipped out by one of our best known breeders, and in less than a year every queen was superseded. This does not happen with queens reared naturally in our own yards, and I believed that, in the methods used by queen-breeders, something is yet lacking to bring these methods to perfection. I would be willing to give a premium above regular prices if assured that the queens would average, say 75 percent of them, at least 18 months of good service after date of shipping.

We hear much these days about improving the honey-bee, and one point rarely touched upon is the need of a strain that will supersede their queens in such a way that the colony will not be weakened at the time this process is going on. At each yard I have noticed some colonies that rarely swarm and yet always attend to this, no matter at what time in the summer, in such a way that the crop is not affected. The majority of colonies hold an old queen until she is about played out, and the colony is so weak that they are no good for the rest of the season. Others will supersede before the queen is so far played out, and (June 9) I have just found two such colonies, the old queen still on the combs and the young queen starting to lay, the colony so populous that they are in the super even with no honey coming. Another matter worth noticing is that supersedure, under conditions like these, nearly always results in a splendid queen, while I generally get a poor queen when supersedure is delayed until the queen is entirely played out and the colony weak.

CONTRIBUTED ARTICLES

What I Know of Bee-Smokers

BY G. C. GREINER.

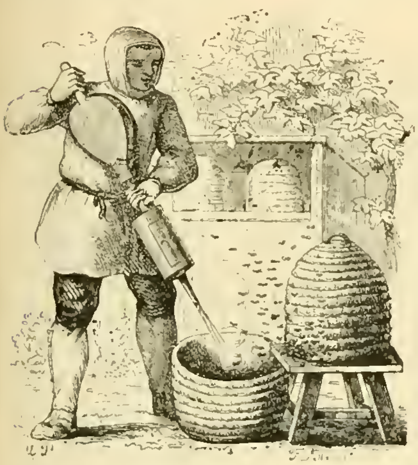
Among the list of apiary tools the bee-smoker is unquestionably one of the most needed by the bee-keeper. I am not well enough posted to give a correct history of its development. I mean to tell only what I *know*, and will confine myself to the experience of recent years.

I used the cold-blast Clark smoker many years ago; then the hinged-top Corneil smoker with its crooked jointed nozzle, and in later years the Root smoker with its flexible hinge and one-piece nozzle. These latter features are an improvement, but they do not convert the undesirable tool into one that can be used with any kind of comfort.

Until about three or four years ago the hinge-top smoker was a constant source of annoyance to me, and I would still have to be satisfied with it if I had not come into the possession of a so-called Telescope smoker. It was an accident that brought its in-comparable superiority over all other smokers to my knowledge.

Connecting the cover of a smoker to the fire-barrel by a hinge is a mistake. The hinge produces a circling motion, with its pin as the center, and this necessitates a loose fitting cover-rim or it cannot be opened, or when open it cannot be closed. This looseness of the rim causes a leaking of smoke, for the smoke finds its exit at this open joint of the cover as well as the opening of the nozzle, where it is desired. In a short time the passing of smoke through this opening causes creosote and soot to accumulate and stick to both sides, cover-rim and fire-barrel, until a tight fit is formed. Then the trouble begins.

The operator is constantly compelled to clean this joint. If the smoker is used right along and kept hot, no great trouble may be encountered, but if left to cool in this condition nothing short of a sledge-hammer will open it. This is not exaggeration. I have had to use a hammer to break the hardened accumulations before I could move the cover.



The Old-Fashioned Bellows.

But this is not the worst feature of the hinged top. What causes more annoyance than the inconvenience just described is the diagreeable soiling of all our appliances, bees and sections included, with the frequent droppings of condensed smoke. This black, bad smelling, sickening liquid is an abomination to the bee-keeper. When cotton waste or burlap is used as fuel this may not be so bad. I never have used either, but when rotten wood is used it is a most deplorable feature. I do not stand alone on these points; it is the general experience of all the bee-keepers of my acquaintance.

The smoker without hinge has these objections in a less degree. The cover can fit reasonably tight and still be readily adjustable, but the handle which might be a little more convenient than the little wire-eye, must be over the center of the cover to insure a more parallel action of the latter to the fire-barrel. This parallel motion is also more effective as an automatic self-cleaning medium than the circling motion of the hinged top.

A smoker that has none of these objectionable features is the Telescope smoker. It is a pleasure to use it, even the most fastidious person could not ask for anything better. Its history is as follows: Some six or seven years ago one of our leading supply establishments sent me a sample specimen of this smoker with the request to pass my opinion as to its practical usefulness. After looking it over thoroughly I pronounced it a failure, on the ground, as I imagined, that the space between the outer and inner barrel would clog with creosote and soot, the same as does the joint of the hinged-top smoker. This, of course, would spoil its usefulness, the free action of the telescoping feature is necessary to make this tool of practical use. Being a little short-sighted, like many others, I did not expect that it would ever be called into service, and placed it in a remote corner on the shelf over my bench.

About two years later, while in the midst of my extracting campaign, it happened that my hinged-top smoker played out. There was no time to send for another, I had to have one that very minute, and the stow-away on the shelf had to fill the bill. At first it did not seem as handy as the old one, but I used it the rest of that day and the next day, and the longer I used it the better I liked it, and today I would have no other.

After three seasons, a bee-keeping friend who, I am proud to say, is one of the best authorities on bee-keeping and its appliances, called on me. While strolling through the bee-yard he noticed in surprise the perfect condition of my smoker, and at once asked: "How long have you used that smoker?" He was still more surprised when I stated the number of years it had done service. There was no sign of clogging or sticking up, and the telescoping worked as freely as it did the day the smoker left the shop.

The reason why this smoker does not clog like the hinged top is easily explained. The only open joint where smoke could escape, besides its regular exit at the nozzle, is at the bottom next to the grate, and the draft of the bellows drives the smoke away from there into the upper part, where no outlet, except the regular nozzle, is available. It is very different with the other. When the smoke is forced into the upper part it finds an easy exit, not only at the nozzle, but all around the loose joint of the cover, and wherever smoke passes, its associates, such as creosote, soot, ashes, etc., will be deposited, consequently sticking up the parts.

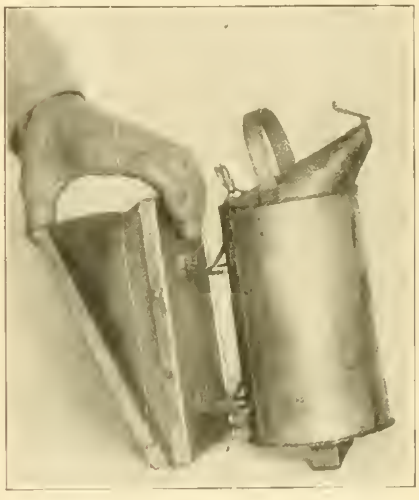
Filling and lighting this smoker is another point in its favor; its management is handier and more according to Nature. It is filled first and lit at the top, which, when adjusted, places the fire at the proper place, the draft-end of the fire-barrel. But the other has to be lit at the bottom first and then filled, which causes frequently trouble by the fire not properly catching, or, if it is filled first and then lit, it places the fire at the wrong end of the fuel to make the draft effective.

Naturally the question will be asked why this smoker, in spite of its superiority, is not more generally used. This, too, is easily explained. First, its superior points have never been made public; its existence is known to a very few directly interested persons only. Second, a new tool, that requires different handling from the old accustomed one, no matter what its advantages may be, is always slowly accepted. Third, all our great inventions have been laughed and sneered at before their benefits to mankind have been understood; it required repeated demonstrations of their importance before the public recognized their value.

It was my intention to say a few words in regard to the size of the smoker; but as this article is already quite lengthy, I will leave that for some future time.

I am in no way interested in the manufacture and sale of this smoker. With the exception of a few minor improvements I am not the inventor, but I am the first one who discovered and published its practical usefulness.

The accompanying drawing shows the Telescope smoker; it is always opened, filled and lit bottom-side up.



Mr. Greiner's Idea of the Best Smoker.

The hinged lid at the nozzle is to close it. This stops draft and prevents unnecessary consumption of fuel; a very desirable feature when used periodically only, and left burning between, as is the case when extracting during a honey-flow.

The foot under the fire-barrel is also very useful; it prevents burning the paint of the hive-cover when left where it is to be used next, and the enlarged handle, as shown, is strictly necessary for the practical manipulation of the tool.

La Salle, N. Y.

Rendering Beeswax

BY FRANK F. FRANCE.

THE PROPER rendering of beeswax from old combs, cappings, and the like, is of great importance to the up-to-date bee-keeper if he desires to get quality wax and the quality price. By all means render your own wax. It is very dangerous to ship old combs to be melted up, in case of infection, unless care is taken to ship in properly sealed boxes.

Different companies advertise for this trade, and if great care is taken, good results can be secured, but I think the price of the right kind of a wax press, to the average bee-keeper, would pay for itself in one season, if not in a single melting. How can the bee-keeper tell how much wax his apiary yields if he does not render it himself?

Beeswax is purely the product of the honey-bee; a secretion formed in the shape of disks on the underside of the abdomen of the worker-bee. The bees form these disks together into the cells of the comb. Pure beeswax should be a natural *wax, yellow*. It should not contain (when properly rendered) propolis, bee-bread of any kind. Therefore, it is the purpose of this short article to give an idea of how good wax can be rendered by the average bee-keeper.

The first thing is to have proper utensils. In the shop I have a large stove, and on this I place a large copper boiler, about 3½ feet square. I make sure, first, that the stove lids are all on, so that the direct fire does not come in contact with the boiler. I put enough water in the boiler to fill it two-thirds full. The remainder of the space I fill with old combs and wax particles. All old combs should be well broken up to melt evenly with the other wax. A boiler made of tin will do just as good work as a copper one, only the copper will last several of the tin in course of time. By all means never use a boiler or press having iron in its construction where the wax comes in contact with the iron, for you will generally get dark wax.

I now build a fire in the stove and heat the water hot enough to thoroughly melt the wax. Often stirring is necessary to keep the wax melting, and never allow the water and wax to boil. In case I see the substance going to boil, I add a little cold water. The stirring will also allow dirt and other substances to settle away from the wax.

As the combs melt I keep adding more wax material, until the boiler is fairly well filled with water and melted mixture.

Now the wax is ready for the press. I use the press shown in the first photograph (cut No. I). In the press I can place one thickness of coffee sacking, letting the center bag to the bottom, with the sacking open and over the sides. I take a large dipper and skim off the wax from the boiler, and pour it in the press on the sacking. The hot wax will run through very fast, as it will have some water with it. The wax and water run out of the spout into square honey cans made ready for the purpose. After several dippersful of the mixture there will probably be some slumgum. The sacking is folded over the hot stuff and pressed by means of the screw. All this operation from the boiler to pressing is done very fast, as the wax will cool very quickly if left in the sacking. To melt combs, etc., for half a day or more, I keep another boiler ready with hot water. One of the most important features of good wax is to have it clean, and this can be done if you have lots of water to precipitate the dirt from the wax as it is melting.

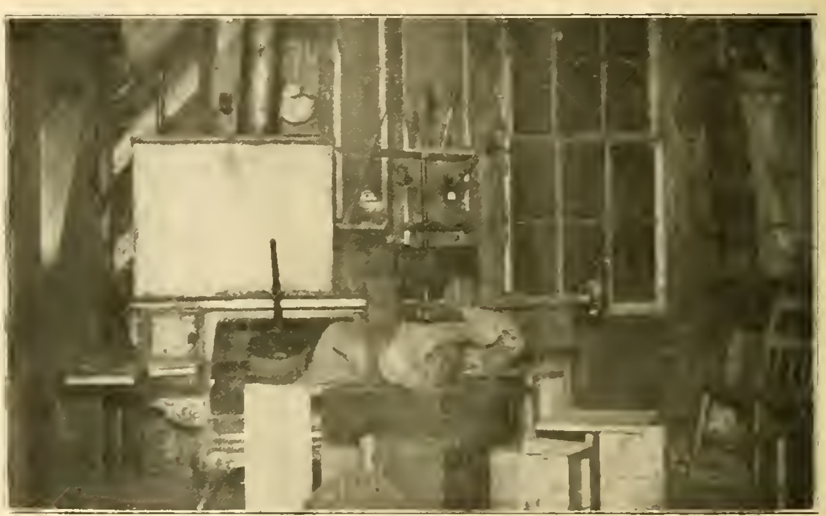


Fig 1.—Stove, Boiler, Dipper, Press, Etc.

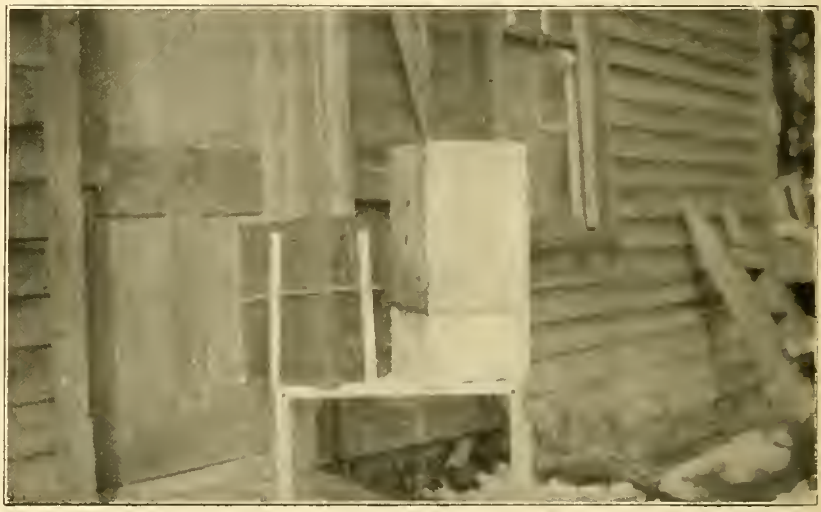


Fig. 2.—One With the Cord and Strips of Wood; The Other Shows the Wax Half Removed.

The best receptacle I have yet found to cool wax in is the second-hand square honey can. With a pair of tin shears I cut out the top of the can; then I lay the can down on its sides and pound the rough edges smooth so that the cake of wax will not catch when taken out.

Before I put any melted wax into the cans, I tie a stiff cord about half way up around the outside. I place a strip of wood about one inch wide between the can and the cord on each side, which will press the sides of the can in. After waiting 24 hours for the wax to cool, I remove the strip of wood and string. The cake of wax will then be smaller than the can, and can be removed easily by inverting, as shown in the second photograph (cut No. 2.) One important thing to secure a good solid cake of wax is to have it cool slowly, and this can be done by covering the cans with a board to keep in as much heat as possible. If the cans are not covered in this way the cakes will be sunken on top and rounded on the bottom.

Platteville, Wis.

Flowers from Which Honey-Bees Cannot Obtain Nectar

BY JOHN H. LOVELL.

NOT long ago there appeared in one of our bee journals the statement by a New England bee-keeper that his bees had gathered 10 or 12 pounds of honey from corn, which provided them with

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a large part of their winter stores. Though the name of the bee-keeper was not given, I do not doubt his sincerity. Others have also reported that bees sometimes store honey from Indian corn. Corn is a grass, and all the grasses are wind-pollinated (except a few which are self-fertilized). It would be of no advantage to them to produce nectar. The "spindle" is composed of staminate blossoms, which produce pollen; while each kernel of corn is a flower with a very long style (the silk). There is not a trace of nectar in either kind of flower; the stigmas, or that part of the style which receives the pollen, are more or less sticky or glutinous, but this is a very different thing from producing nectar. I do not believe that all the bees in New England ever gathered an ounce of nectar from corn flowers. Corn honey is a product of the imagination. Honey-bees do, however, collect pollen from the spindles, as I have myself noticed, and it may be that this habit has given rise to the belief that they obtain nectar.

But drops of water, when the air is humid as in the evening, do exude from young leaves of corn. These drops stand in rows, and as they are excreted under conditions similar to those which are favorable for the precipitation of dew, may easily be mistaken for dew drops. Exudation of water by the leaves of plants is by no means restricted to Indian corn, but occurs also in nasturtium, many tropical plants, and plants growing in moist situations. It is of benefit because it permits the surplus of water to escape, when the air is so moist that it cannot be removed in the normal way by evaporation (transpiration).

The drops appear at the ends of the veins and are forced out by the pressure of the accumulated water within. There are often pores in the leaves suitable for this purpose. The liquid is almost pure water, containing only one percent of salts, so that it cannot be used by bees as a substitute for nectar. Perhaps bees in need of water may sometimes suck up these drops, but they are excreted only at special times.

A somewhat similar myth is current in the States on the Pacific Coast, where a species of very abundant sedge is believed to be the source of "tule honey." The tules grow higher than a man's head and form great marshes, sometimes traversed by a maze of water channels. A season or two ago two young men in a small motor boat became lost in one of these swamps in Oregon, and did not escape until the third day. They suffered greatly from hunger, as they did not know that tule roots are "good to eat." Finally they abandoned their boat, and mashing down the tules to prevent sinking into the swamp, they crawled on their hands and knees for nearly a mile to the main land, which they finally reached in a state of utter exhaustion.

In his work on the "Honey Plants of California," M. C. Richter says, "Honey-buyers often refer to honey gathered along the Sacramento and San Joaquin rivers as 'tule honey.'" But he expresses the belief that there is no such honey. This is undoubtedly correct, for all the species of the great family of sedges are pollinated by the wind, the flowers are nectarless, and are visited only occasionally in the case of some species for pollen.

Oak and hickory trees, and hazelnut bushes are also sometimes reported as good honey plants; but the flowers of all three are wind-pollinated and produce no nectar. The leaves of various species of oaks and hickories are, however, sometimes covered with honey-dew. The storing of this sweet excretion of plant-lice might easily give rise to the belief that the bees were bringing in nectar.

While it is very evident that progressive apiarists, as a whole, are studying the honey-flora more carefully than ever before, there still remains many a bee-keeper who never gives any attention to the honey-plants of his neighborhood, and to whom the wild flowers always remain strangers.

> "Primroses by the river's brim
> Dicotyledons are to him.
> And they are nothing more."

He asserts, not incorrectly, that the bees know more about the flowers than he does, and so leaves the whole matter to them. But if a great abundance of nectar-bearing flowers, for example, should come into bloom some 3 miles from the apiary, would it not be worth while to know whether the bees found the flowers promptly, or whether they found them at all. It would certainly be desirable to prevent such an oversight. Too often, if there is only a small surplus of honey, he does not know whether the fault is with the bees or with the honey-flora.

Then, again, there are some bee-keepers who appear to look upon flowers as created or evolved solely for the benefit of bee-culture. They are slow to realize that there are blossoms which are nectarless, or which contain nectar inaccessible to honey-bees. Accordingly we find, from time to time, bird flowers, bumble-bee flowers, butterfly and moth flowers, pollen flowers, and wind-pollinated flowers reported as excellent honey plants. That a flower should produce nectar plentifully, but at the bottom of a tube so long that honey-bees cannot reach it, seems to them an evidence, as a Yankee once remarked, that "Providence was kind, but careless." Nature fashioned the wild flowers before the human race appeared upon the earth, and they would not have been one wit different today had the appearance of mankind been deferred to some distant future.

There is a very general impression that a large flower garden is an excellent bee-pasture.

"I suppose," said one of my customers as he was leaving, "that your bees get a large part of their honey from your flower garden."

"No," I replied, "a great many cultivated flowers are of no value to bee-keepers."

"Why," said he, "I supposed that al flowers yielded honey."

Close to my apiary is the largest specimen of the bush honeysuckle (*Lonicera tatarica*) that I have ever seen. When in bloom it is literally a small hillock of flowers. They are bumble-bee flowers, and the bumble-bees visit them in large numbers; but honey-bees cannot reach the nectar though they gather the pollen. This hardy shrub is widely used in hedges and on lawns.

Not far away is a vine of the climbing honeysuckle (*Lonicera periclymenum*). The flowers are hawk-moth flowers, and expand at nightfall, when they exhale a most pleasing fragrance. The first evening the corolla is white, and the stamens stand directly before the entrance to the flower; on the second evening the color changes to yellow, the stamens bend downward out of the way, and the stigma moves upward before the entrance—this is an arrangement to prevent self-fertilization. The hawk-moths come in numbers, and as they poise before the flowers might easily be mistaken for humming birds. I once saw a leaf-cutting bee trying to reach the nectar, but it soon desisted, as its efforts were useless.

As you enter my garden there are two large clumps of Sweet William (*Dianthus barbatus*): they are butterfly flowers. The brilliant variegated corollas, and the sweet fragrance, are familiar to you all. The calyx tube is a little over half an inch in length, too long for the tongue of the honey-bee. But I have seen honey-bees visit cluster after cluster of flowers; one of them thrust its tongue down the tube, probed between the petals, and even looked under the corolla, but it could not obtain the nectar. Subsequently the bees remembered their futile visits, and did not often return.

The bee larkspur (*Delphinium elatum*), the columbine (*Aquilegia vulgaris*), and the monkshood (*Aconitum napellus*) are all bumble-bee flowers, and of no use to the apiarist. I have seen a honey-bee push its tongue into the spur of the bee larkspur as far as possible, but the nectar was quite beyond its reach. A couple of blue petals had fallen on green foliage leaves, and a honey-bee was seen to inspect each of them, showing that it perceived color. Nectar is very abundant in the long spurs of the columbines, and in the white variety can readily be seen through the translucent sides. So long as the spurs remain intact honey-bees gather the pollen, but do not often seek to obtain the nectar. But every season bumble-bees bite holes in the nectaries in order to get the nectar more easily; the honey-bees promptly discover these punctures, and use them freely to rob the flowers.

The commonest of garden flowers, the nasturtium, has a nectary so long that honey-bees cannot reach the nectar, and so tough that bumble-bees cannot puncture it, so the honey-bees

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perforce content themselves with the pollen.

The scarlet runner (*Phaseolus multiflorus*), the common garden pea (*Pisum sativum*), and the sweet pea (*Lathyrus odoratus*) have the parts of the corolla so firmly locked together that honey-bees are not strong enough to depress the keel. One season, and only one, in my garden bumble-bees punctured the flowers of the scarlet runners when the honey-bees quickly noticed their opportunity and extracted the nectar through the holes.

The scarlet geraniums, or Polargoniums come from South Africa, and in this country are very rarely visited by insects. They appear to be Lepidoterid forms. The petunias come from South America, and in their old home are probably nocturnal flowers.

Very many cultivated flowers are thus of no value to bee-keepers. I trust this brief review may lead some of my readers to investigate other forms for themselves. I believe that every bee culturist will find it profitable to familiarize himself with the honey flora of his region, and I am sure he will find it a great pleasure. The time is soon coming when the honey plants of every part of our country will be well known, and the problems relating to them will be more carefully studied than ever before. Encourage your children, both boys and girls, to learn the names of the wild flowers about them, and to prepare a list of those visited by honey-bees. They will not only gain much useful information, but will cultivate mental habits of priceless value. Ability to observe carefully has been rightly described as one of the elements of success.

Waldoboro, Maine.

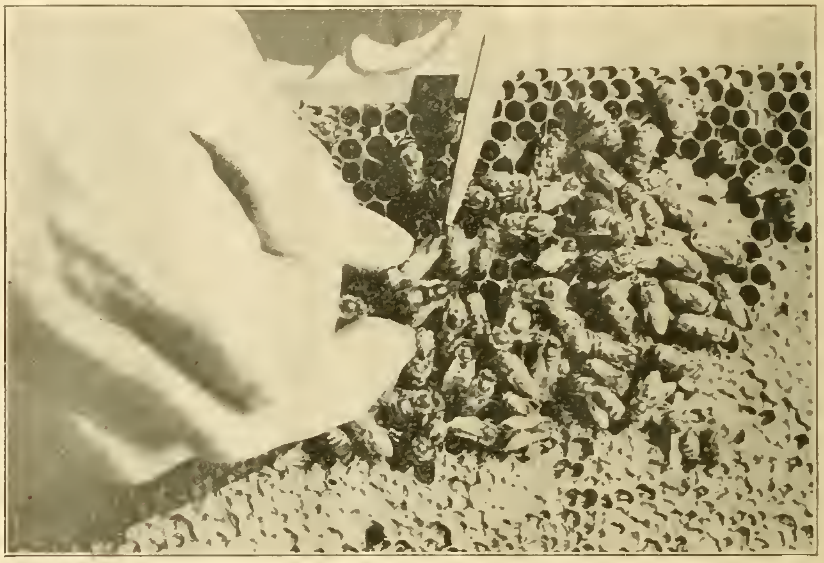
Notes by a Queen-Breeder

BY A. D. D. WOOD.

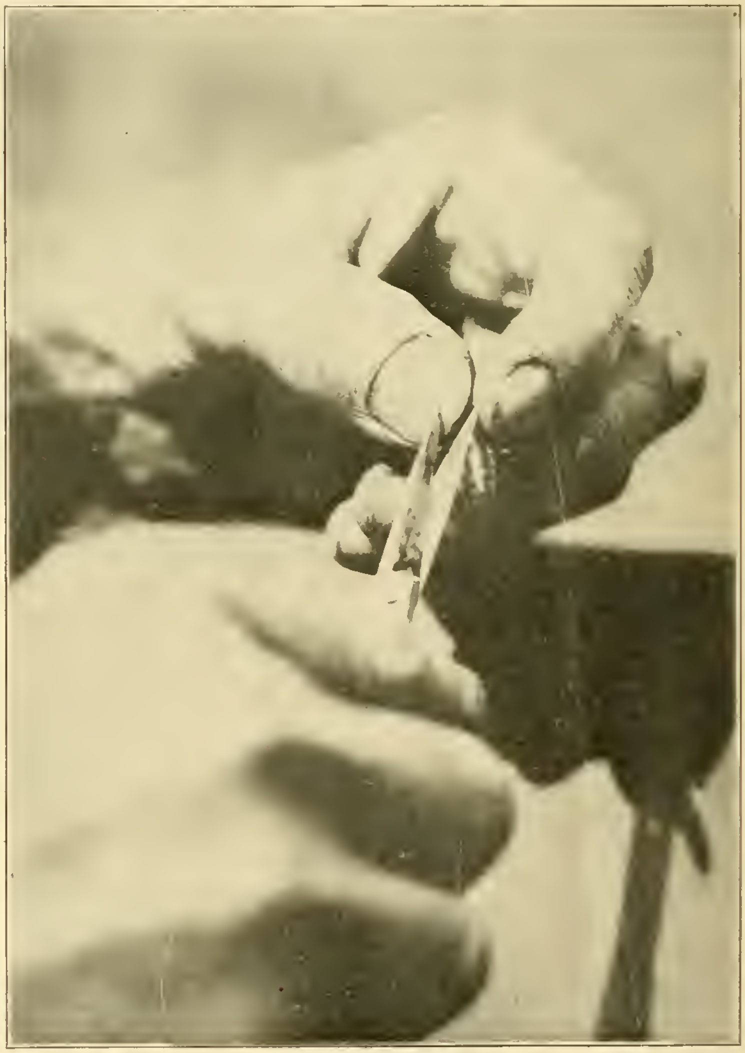
I HAVE NOTICED at times there has been complaint of queens being injured in transportation through the mails, and I have often wondered if it were really so, or if they were not hurt in catching and caging.

Herewith pictures of my method of catching, clipping and caging queens for shipment. Figure I is the comb having the queen. With scissors in my left hand, I chase her uphill, and with my right I catch her by the wings with my thumb and second finger. My first finger got in a mixup with a buzz-saw. Then placing the scissors in a convenient place, I change the queen to my left hand, taking her by the head and shoulders between my thumb, first and second fingers, leaving her wings protruding out while her body curls downward, thereby making it very easy to clip either wing.

I usually clip the left one. (See Fig. 2.) I would advise using some other device if you are at all nervous and jerky in the fingers, as a little pinch will easily indent the abdomen, making the queen nearly, if not quite useless. I



No. 1.—Getting the Queen from Comb.



No. 2.—Clipping the Queen's Wing.

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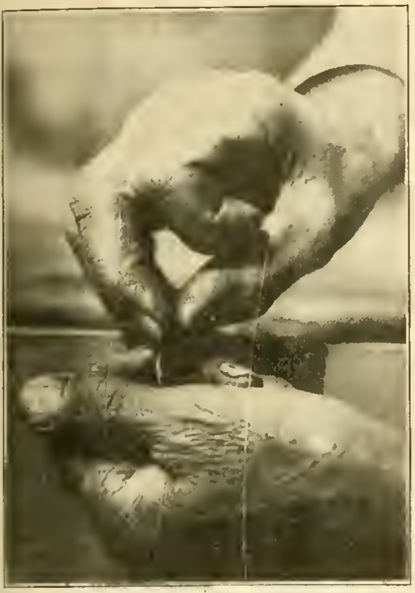


No. 3.—Ready to Introduce the Queen in the Cage.

have had choice queens do good work for a short period, only to be superseded during the first season.

The queen being clipped, we now take her by the wing, or by both wings. If the clipping is not done bunglingly, and stubbed off short, drop her into the left hand (Fig. 3), not trying to force her through the hole in the cage, as she is always very reluctant when forced in. Take the cage and turn the perforated tin back, having the hole free and clear, and place the cage over the opening to be made (Fig. 4) in the hand, and she will readily enter toward the light.

Figure 5 shows the position of the cage while filling it with workers. Here is a point I wish to emphasize, and that is, the importance of using *young* and *evenly marked* bees. Use the ones that are dipping their noses in the cells, as they show color and age, and are easier to catch by the wings. The queen ships better if there are no old dead bees in the cage, and they all look nice and bright even though they are on the road 10, 15, or 20 days.

Lansing, Mich.

Competition

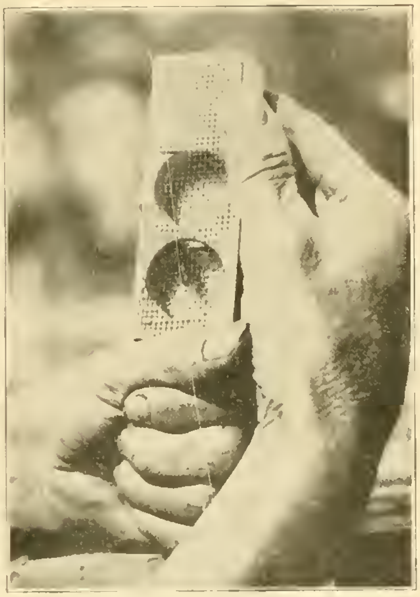
BY A. F. BONNEY.

I KNOW of no business men in the world, other than bee-keepers, who deliberately invite and encourage competition, and that, too, from a class which invariably lowers prices, debases breeding stock, the bees, spreads disease and disseminates erroneous impressions about the honey-producing business.

The competition I allude to is of the farmer bee-keeper, who is the last remaining type of the apicultural cliff dweller or cave man—he of the gum log and box-hive who produces a little honey for the family table, generally by sheer chance, and having a few pounds surplus sells it for half price. I do not here allude to the amateur bee-keeper, for he has an object in view, a life vocation, but only to the too frequent ruralite who, catching a stray swarm of bees, hives them in any old receptacle, and in the fall "brimstones" them for a pound or more of honey, generally asking and getting the help of the local professional who dares not refuse for fear of losing a sometimes customer for his stock.

If we may not improve bees as intelligently as we can horses and cows, we may get and keep the best, those known to be of good strain and marking; however much we may disagree as to the merits of the various breeds, there is no disagreement about the small and erratic bee-keepers spreading disease, for not one of them knows how to tell if a colony has foul brood, and would not know how to treat it if he did. Moreover, they are often inclined to object with physical force if an inspector proposes to destroy an infected hive.

Moreover, it is the farmer who spreads erroneous impressions about honey. Notwithstanding that we have in Iowa a stringent Pure Food Law, farmers have said to me: "I do not like to buy strained honey for fear it is adulterated," at the same time they buy glucose sweetened with cane sugar knowingly, for the label proclaims it. They are the ones who perpetuate the ancient canard that there is such a thing as artificial comb honey, yet in the face of all this we write and talk, and help to urge them to keep bees, and to add to our sins we give them the dovetailed or single-walled hive, knowing they will not take the trouble to protect the bees in cold weather.

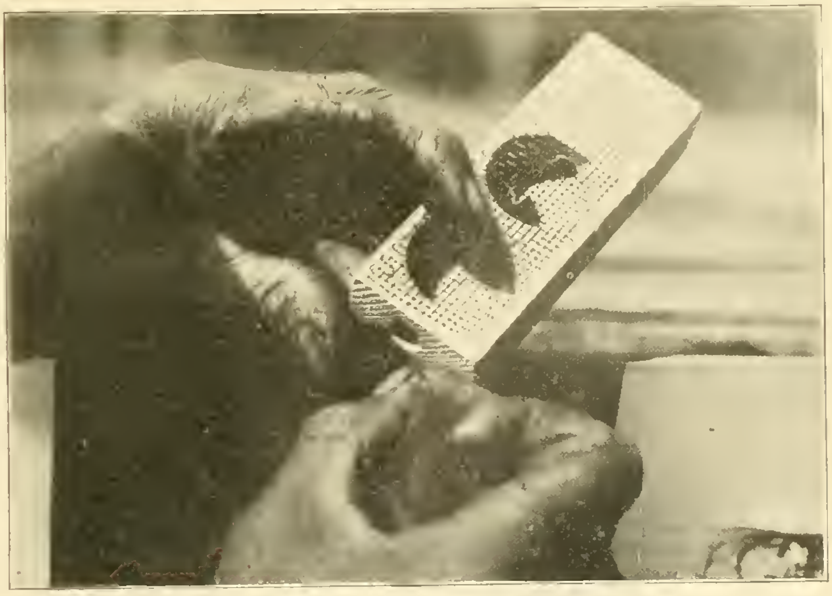


No. 4.—Position of the Cage for the Queen to Enter.

The manufacturer of and dealer in bee-keeping supplies is the only one who can possibly benefit by this line of conduct. The producer of honey suffers from all the ills mentioned, the most serious of which is spasmodic competition. I have known nice looking honey in extracting frames to be sold in this town at 8 cents a pound when I was asking 12½, and got it, when the other had been disposed of. The crop was small that season, and I could have secured 15 cents a pound had not the farmer ruined my trade.

SPECULATION.

I read in a daily paper that the gov-



No. 5.—Filling the Cage With Workers.

LEWIS HIVES ARE BUILT LIKE FURNITURE ARE PERFECT IN ALL RESPECTS Send for Annual Catalog which will tell you who is your nearest Distributer. G. B. Lewis Company, Watertown, Wis.

ernment, through Dr. Phillips, was about to investigate the tremendous loss of bees in the United States during the few years past, and while this might seem a laudable task, at first glance, more study will make it look like asking Mother Nature why the increase of all living beings is restricted.

Germs will find lodgment in the body and increase until, if unrestrained, they would soon weigh more than the body itself, and the germs are so small that it takes vast numbers of them laid end to end to equal an inch. When they die a substance is formed called ptomaine, and this is poison to the living germ. Mother Nature cannot use ptomaines on bees, but she has provided bad seasons, foul brood and brimstone. There has, for some three seasons past, been a woeful lack of moisture; there has been little or no clover, basswood has not yielded, and there was no fall flow. A little sweet clover gave scant summer feed, and as a result there was little brood-rearing. To add to our distress the winters have been of a character conducive to destruction of bees.

Were it not that all forms of life are restricted by climatic changes, natural enemies and disease, there would not be room in the ocean for the fishes, in the air for the insects, nor on land for animal life. Australia and California are examples of countries over-run with rabbits, and were conditions for the increase of bees always favorable, and food supply abundant, they would soon be a nuisance.

Changes of climate have much to do with the reduction in number of some forms of life, and certain conditions, long continued, would wipe out some forms of life entirely, just as the mammoth, probably was, in what is now Siberia and Alaska. That these gigantic animals formerly existed there in vast herds there is no doubt. During certain of the geological periods monstrous animals lived, lizzards 50 to 75 feet in length, immense turtles and sharks swam in the seas, and forms of flying life undreamed of now. These all perished owing to continued climatic conditions to which they could not adapt themselves, and new forms took their place.

In the same way the bees might easily become extinct. We know they do not exist in the treeless and cloverless plains of the Dakotas, and if we had a continuation of climatic conditions such as have existed here for three years past, the number of colonies of bees in the United States would be sadly reduced, even if the bees were not wiped out.

Buck Grove, Iowa.

Capping Melters—Handling Cappings

BY L. C. DADANT.

SEVERAL LETTERS similar to the following have been received:

"*Dear Sir:*—How do you get the honey out of cappings, and what use do you make of it? What is the latest and best method? Have you tried any of the contrivances for melting them up direct from the knife, and what success have you had? I do not see much said about it of late in the bee journals." W. T. CARY.

Wakenda, Mo.

Various methods have been devised to get the honey from cappings with the least trouble. The most modern of these is the capping melter which melts the wax as fast as it falls from the capping knife, and allows the honey to separate from it at once. However, there has been considerable objection to this implement by some of the large producers on account of the extra heat produced, and the danger of scorching or discoloring the honey.

As uncapping is usually done during the hot summer months, extra heat in the honey-house is not desirable. Bending over a gasoline stove, with a steam-heated knife in your hand when the thermometer outside stands anywhere from 90 to 100 degrees, is not a very enticing proposition for the workman who does the uncapping.

To get prompt action in melting cappings, a temperature of over 150 degrees must be kept up in the capping melter, as beeswax will not melt readily under that point. In extracting white clover, or any white or mild-flavored honey, there is considerable danger of spoiling its color or its flavor, or both.

For the bee-keeper who has 50 colonies or less there is little doubt that the regular capping can, called by some "uncapping can," made and sold by nearly all manufacturers of supplies, and which was devised by Mr. C. P. Dadant in the early days of the honey-extractor, is the best implement to use in handling cappings.

Even for the specialist who is running wholly for extracted honey, the old reliable capping can does very well if properly manipulated. Several of our most extensive bee keepers still use it in preference to the capping melter after having given the latter a thorough trial.

In running several hundred colonies of bees for extracted honey, it is our practice to uncap into capping cans a little larger than those sold on the market. They are made large enough so that two of them hold all the cappings of a heavy day's work. As the cappings are occasionally stirred, they drain very readily, especially if the weather is warm.

When extracting several days in succession, we allow the cappings to drain until morning, when they are transferred into larger tanks, made on the same plan as the capping can, but of three or four times its capacity. As there is comparatively little honey left in the cappings then, the tanks are made with less room below and more room above the screen than the regular capping cans. In these tanks the cappings are allowed to drain until we are ready to render them into beeswax. If the weather is warm, or if these tanks are kept in a warm room it is surprising how dry the cappings become.

The only time lost in these operations is that of transferring from the capping can to the tank. While extracting, the honey need be drawn from the capping can but twice a day. There is no bucket or tank to watch, no fire going; in fact, all that the man with the knife has to do is to skin his combs and occasionally stir his cappings. True, the cappings have to be melted afterwards, but this job is done at any time after the harvest is over, when there is no apiary work.

Rendering the cappings into beeswax is not difficult. Should one wish to make vinegar, the cappings are washed in water just warm enough to make them plastic, but not warm enough to melt them. In doing this a considerable quantity of water should be used, depending upon the amount of honey left in the cappings. Thus nothing whatever is lost, and the very best vinegar is secured.

If the bee-keeper does not care to go to this trouble, he can melt the cappings with just enough water to dissolve what honey settles to the bottom when they are melted. This syrup, after being thoroughly reduced, can be saved for spring feeding.

Hamilton, Ill.

[We give herewith some replies received from prominent honey-producers. In the West, where the heat is less intense than in the Mississippi valley, and where one never feels hot in the shade, the heat of the capping melter is not objectionable, and a number of apiarists make light of that fault, which is to them unimportant. So it is to a certain extent a question of location:—EDITOR.]

In reply to your enquiry as to how we like the capping melter, will say our objection to the heat is overcome by the currents of air sent out by the 8-frame power extractor near the melter. To avoid scorching honey, we keep the gate open so the honey and wax run out as fast as melted. I don't think, in our 4 years' experience with the capping melter, that we have scorched any honey, though most of the honey from the melter is colored a little and the flavor is changed, yet we do not consider such honey damaged; therefore, we pour it in a large tank with other honey. We wouldn't like to go back to the old capping can unless we have some better device to melt cappings than I have seen.

At one time we depended upon a solar extractor to melt cappings, and on a cool, cloudy day we were troubled with the cappings piling up in our way. At last we had to build a fire to melt them. But not so with the capping melter. We want the water in the melter boiling by the time we begin to uncap, and we want it to boil lively all the time we are uncapping. At the close of the day's work we cover the melter with a heavy cloth and let the fire burn until the cappings are all melted. But do not let the honey from the slum-gum at the last mix with other honey, as it is too dark. Let the slum-gum cool in the melter, and remain until the melter begins to warm up with the next fire, then the slum-gum will not stick, and can be taken out in a solid mass.

Root's melter is too small in diameter. We are having one made 20 inches

in diameter, 16 inches high, with 3 legs 12 inches long. The gasoline tank is fastened to the wall, and the pipe can go as far as necessary to reach the bottom of the melter with a burner attached. W. H. CRAWFORD.
Roswell, New Mexico.

I have not tried any of the different capping melters, although I have kept *very* close watch on what has been done. I feel reasonably sure that the cappings cannot be melted without injury to the honey. Our best Ontario honey is very light in color, and would readily show any discoloration. I drain the cappings, and then run what is left through the solar, getting something of value for the honey thus obtained. So far as I can judge I have no use for a system by means of which I have to heat a lot of honey which could be strained from the cappings in a few hours. R. F. HOLTERMANN.
Brantford, Ont.

I have no capping melter, but in my travels I have seen several (5) kinds in use. Almost every one has, to me, its objections, so that I prefer to stir or break up the cappings, and drain over tinned wire-cloth ¼-inch mesh. That honey is ready to go with the rest, but all melters but one that I know of darken the honey in melting the cappings. Again, our extracting is done during warm weather, and to stand by an uncapping melter would be uncomfortable. We use a one-wick-oil-stove for the steam uncapping knife; but the stove is just outside the bee-house in a box; the rubber tube through the wall connects to the knife.

I have tried several uncapping machines, and the steam knife is far the best for us. We have two.
Platteville, Wis. N. E. FRANCE.

Single-Story Hives

BY F. GREINER.

AMONG the questions that have been asked me by different bee-keeping friends during the recent season, there are a few that I believe are of interest to others as well as to the questioners, and, without repeating the questions, I will proceed to answer.

THE LONG IDEAL HIVE AND THE WIDE DOUBLE-TIER FRAME.

If I were to engage in the production of comb honey, I would not want to use the "long hive" single story, but if I *had to* use this style, I know of nothing better than the wide double-tier frame holding 8 sections of the regular 4¼ size as a fixture for the production of section honey. During the earlier period of our bee-keeping we often noticed, in roomy hives, solid slabs of honey at the sides of the brood-nest; this even quite early in the season when that honey should have gone into the sections. It was very natural to use wide frames with sections, to be placed close to the brood-nest in place of this apparently superfluous comb.

Thus I tested this side-storing principle. I found the bees disinclined to finish the combs built. Particularly the lower tiers of sections were shamefully neglected. We had not thought of making reversible frames at this time, and so in order to have the sections finished at all, I had to take them out of their frames and place them above, which is too fussy.

Not using full sheets of comb foundation, it was next to impossible to get the combs of the lower tier fastened to the bottoms of the sections without reversing. The eight sections next to the brood were often badly stained, and contained pollen. Then the removal of the honey was laborious. I was very much annoyed by the bees staying behind the separators when trying to remove the frames with filled sections, and before I could hinder it, biting holes into the sealed faces. This proved a great trial to me as long as I continued the side-storing principle. I could not drive the bees away with smoke, nor handle the single sections quickly enough to prevent the bees injuring the honey. This, in connection with the other disadvantages, caused me to abandon the plan.

For the production of extracted honey, the long hive would work all right. Great crops have been produced with them; but whether used for comb honey or extracted, I should want the entrance to the hive *not at the ends* of the combs, as in the regular hives, but at the side; brood-chamber next to entrance, honey-chamber back of brood-chamber. Reasons for this arrangement are obvious.

A minor drawback to the long hive is its taking up a disproportionately large floor space and requiring a more expensive roof than regular hives do. The good feature of the long hive is that it allows access to either the brood-chamber or the honey-chamber without materially disturbing the other.

As to the size of sections: I would adopt the 4¼ size if I were to begin anew. Although I am using the 4x5 size, and shall probably continue to do so, it was by a mere chance that I adopted it. The 4¼ section is the unit upon which the Langstroth frame is based; eight of these sections just fill the inside of the frame; and the Langstroth frame is the all popular one. Why use any other? I see no reason why we should not use uniform sections, even if we have other frames in use. It would be better if we had only one frame in use, and I believe it is working that way; but it will be some time before this happens.

I still believe that the wide-frame single-tier super is the best. Properly constructed and properly made it protects the sections perfectly on all four sides, and prevents the bees from soiling the outside. I have not yet seen anything handier, more effective, nor better. Many good and extensive bee-keepers agree with me on this question.
Naples, N. Y.

[We can commend the ideas expressed by friend Greiner, for we had the same experience years ago. The single-tier hive, if made large enough and used for extracting is all right. In fact, it is used largely in Europe. In France, these hives are made to contain some 20 frames measuring about 12x12 inches, and are called "horizontal" hives in distinction from the tier-hives with supers, which are named "vertical."

When the entrance of the hive is made *at the side* instead of *at the end*, the Europeans call it a "warm comb hive," while the other entrance gives it the name of "cold comb hive." Evidently those who made these names popular decided that the entrance located at the end of the frames made the hive colder. We have tried both, and much prefer the "cold combs," because the bees have easier access to all parts of the hive as they come in. With very large crops, and the use of the extractor, even the 20-frame hive is too small without supers. But it is a great convenience and economy to have only one style of frame in the apiary.—EDITOR.]

European Foul Brood, and Why It Does Not Disappear During Winter

BY L. J. RAY.

IN A RECENT issue of the American Bee Journal, the question was asked: "If making a colony queenless for 3 weeks will cure it of European foul brood, why is not every case cured during the fall and winter, when brood-rearing naturally ceases for several weeks?"

This question has frequently been asked, but, so far as I know, it has always remained unanswered. It is well known that colonies afflicted with this malady are not usually cured by their annual period of cessation of brood-rearing, and because of this many are skeptical about the efficacy of the Alexander treatment. As I have had abundant opportunity to try the various methods of treatment during the past 3 years, I will give a few points from my experience in the hope of benefiting some others who have to cope with the same disease.

The whole secret of curing European foul brood, without destroying the combs, lies in doing it at a time when nectar is coming in from the fields. The cure is effected by the bees removing the dead larvæ and polishing the cells. This they will make no at-

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tempt whatever to do except when nectar is to be had or when they desire to rear brood. This house cleaning is best accomplished by requeening by means of a queen-cell. The bees seem to become more enthusiastic over the matter as the time approaches for the young queen to begin laying than when a laying queen is given to them direct.

A very effective method for this treatment of mild cases, when nectar is plentiful, is to place the brood above an excluder and the queen below. I would advise requeening, however, as soon as convenient with a queen of less susceptible stock, or the disease will be very likely to reappear some time later on.

I have cured a great many colonies by the Alexander method, but these colonies invariably had an unpleasant way of becoming re-infected. They wouldn't stay cured. With one slight variation it has been made to work in my own, and also in a number of other apiaries in this vicinity, with decided success. That one important little "kink" is to use Carniolans instead of Italians. After discovering foul brood in my apiary, I ordered six Italian queens from five of the most noted queen-breeders in the United States. From these I reared queens to requeen my apiary, then consisting of about 100 colonies. In less than a year every colony containing an Italian queen, with one exception, showed the disease. Of course most of the young queens were mismated, but some seemed to be purely mated; the breeding queens certainly were.

The following spring I requeened with Carniolans, and while they are not entirely immune, they seem to be far less susceptible in this locality than are the Italians. The majority of my full blooded Carniolans have never shown a trace of the disease, and those that have become infected have contained but a few diseased cells. This is the second year in which I have been breeding Carniolans exclusively, and so far it has not been necessary, in a single instance, to requeen a colony of these bees when in their purity.

Since Carniolans are gentler, more prolific, and in every other respect the equal of the Italians, it seems to me they should be better known.

Monrovia, Calif.

Railroad Overcharges

BY B. F. SMITH, JR.

IN THE DECEMBER Bee-Keepers' Review, over the signature of W. F., I find the following:

"The freight on coal is 40 cents a ton from Colorado coal fields to Nebraska and Kansas points. This is 2 cents a hundred pounds. For shipping apples from western Colorado to Denver the rate is 55 cents a hundred. The distances are the same, but the rate is 20 times as much. But now let us take potatoes. The rate is 45 cents a hundred to Denver, and potatoes are shipped in cars but little more expensive than coal cars. The rate is 22 times as much as coal. Now the rate on honey is $1.40 from southwestern Colorado to Denver, and 85 cents a hundred on honey from western slope points to Denver, or 70 and 42 times as much as on coal a like distance. The local rate on honey is $2.15 a hundred from southwest Colorado. You can see that the rate on honey is 2 or 3 times as much as upon apples, and they are shipped in the same kind of cars. The railroads' charge is not according to the cost of carrying, but what the traffic will bear.

"A producer on the western slope was told by a freight agent (to whom he was complaining of the shortage of cars) that his interests were served as well as those of any other non-competitive point. The railroads have plenty of cars, even during the heavy crop-moving period, at the points where there is competition."

There are many things to be taken in consideration on the rate question. Among the points to be considered is the number of cars required to move a certain tonnage; a 40-ton car of coal is about the smallest handled in this territory; the minimum on coal is the marked capacity of the car, while honey is only 15 tons. A car can be used for coal when it is unfit for any other commodity. The price of a carload of coal, freight and first cost added, delivered at northeast Nebraska points, some 1200 miles from the mine, is $7.50 to $8.00 per ton. The value of a car of honey delivered over the same points is about $160 a ton, cost and freight added. Twenty times as much.

Should a car of honey and a car of coal be wrecked which would be the greater loss to the carrier? The car of coal could be picked up with very little loss of coal; but how about the car of honey if it should be mostly comb? The two cars arrive at destination, and weather conditions must be very bad indeed to delay the unloading of the coal, if it is necessary, but how about the honey? The coal mine orders 20 cars for tomorrow's loading, and at 6 o'clock tomorrow, rain or shine, sleet or snow, a crew can be called for those 20 cars.

The producer orders a car for his honey, and probably uses the full-time limit to get his 15 tons aboard, and if it should be rainy, or the road very rough, he wants more time and gets it; equipment is tied up; car has to be set several times; reports made out, etc., while the train of coal is a long ways on the road, and some of the short hauls unloaded and on their way back to the mine before the car of honey has moved.

Nearly all the roads in the North refuse to handle potatoes or apples in common box cars after Nov. 1, just about the time coal commences to move. How many claims are filed on apples and potatoes frozen and damaged in transit, I am not in a position to say, but we can all guess it is less on coal. In my own experience I can truthfully say that there have been as many claims filed on apples stolen from cars as on coal, although I have probably handled hundreds of cars of coal to one of apples.

Every division of a railway has a force of men who attend to the distribution of the cars. On this system we send a daily telegraphic car report, showing the kind and number of all cars on hand, and of all cars wanted for loading. The car distributer finds he has 40 cars ordered, and but 25 cars available. All orders are cut alike, but you will find this difference just the same as in any other line of work; that some agents can get more cars than others situated the same.

I don't mean to say that W. F. can't get a reduction on honey rates, for I think they are too high compared with goods of like nature, as are also the rates on supplies. I think that the National should get after the rate committees and get as good a rate on honey as we have on maple syrup, and as good on hives and shipping-cases as canners get on cases and like material.

The Country Gentleman for Jan. 11, has an article as follows:

CARS USED AS WAREHOUSES.

"Given reasonable freight rates the shipper is just as bad off if he cannot obtain cars; indeed, cars are more important than fair freight rates......... It is said there are now standing on side-tracks at seacoast points 50,000 loaded cars of coal on which the consignees prefer to pay demurrage rather than unload and store the coal. In the West and South there is a shortage of cars for the handling of grain crop. Thousands of carloads of grain, sacked, cannot be moved to shelter............

"The railroad companies claim they have plenty of cars, but that they are standing on side-tracks, in Galveston and New Orleans, loaded with cotton for export, upon which the handler prefers to pay $1.00 per day per car rather than unload and store the cotton. The shipper has found it cheaper to use the cars for warehouses than to build warehouses. It is said there are now standing on the tracks of New Orleans 6000 box-cars that have been so held from 10 to 30 days, while the business of the whole country is paralyzed by the lack of cars for the more pressing traffic."

The writer of the above should have told the percent of these cars that were fit for other than coal handling. We have standing instructions not to send cars to the mines that are fit for merchandise, except cars belonging to other roads. Ninety percent of the cars sent to the mines are cars belonging to other roads. The cars at Missouri River points, where they accumulate, are inspected both as to mechanical and internal condition, and are tagged "FIT FOR GRAIN" and "NOT FIT FOR GRAIN." Cars tagged as fit for grain are moved into a territory in need of that kind of equipment, and

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cars tagged as not fit for grain are moved into coal territory.

Having had some 13 years' experience at competitive points, I do not think they are favored over non-competitive points, but, as a rule, a station with two roads is larger, and does more business than the non-competitive points, and has more cars to load or to unload.

Why not have a rate department to the National? There are several institutions in the United States which have men traveling over the country at a large expense, gathering up old freight bills to be examined by an expert. The usual terms are half and half. The National would save the traveling expenses, and I should think every member would be willing to mail all his old freight bills to them. The only objection I have to this is, it seems hardly fair to try and find mistakes only where the railroad company has made an overcharge. I never heard of any other kind being reported.

Cowley, Wyo.

[Mr. Smith gives us the railroad's side of the question with fairness. But "the character of a railroad is determined by the men who represent it, and the character of any other business is judged in the same way." This is quoted from the speech of Hon. O. F. Berry, chairman of the Illinois railroad and warehouse commission of Illinois, before the National Industrial Traffic League. In numerous instances non-competitive points do not have the treatment accorded to competitive points, either in facility of securing cars or in rates.

Demurrage, mentioned by Mr. Smith, will not be entirely fair to all until it is "reciprocal." Railroad lines lose opportunities by having their cars used as warehouses on side tracks, but they get $1.00 per day for the use of the car, which is at least some compensation for the loss. But shippers have no compensation either for being unable to get cars or for having their goods longer on the way than is reasonable or necessary. If a company holds our goods 10 days, 30 days, 6 months beyond the time actually needed, we have no recourse but a claim or a lawsuit. European regulations recognize reciprocal demurrage, and hold both shipper and carrier to certain fines, payable at once, for delays beyond a stated limit. We will have to come to such a measure here.

Let us second Mr. Smith's suggestion. The National Association should take all these matters in hand and work towards better conditions, fair alike to shipper and carrier.—Editor]

What Yields the Dandelion Honey?

BY E. S. MILES.

IN NO VOCATION or walk of life, perhaps, is the truth absolutely clear and unmixed with error. Perhaps as our lovely clover or basswood honey may *look* all clover or all basswood, and pass for unmixed article among people usually, yet on a chemical examination it may show a mixture, a certain percentage of something else not true clover or basswood nectar.

So it seems to me, in bee-keeping we have what passes among the rank and file for absolute truth, yet a close examination will show more or less error in most of it. This, and the difference in "locality," and the different view points of different men, caused by the difference in mental make-up, is enough to account for a large part of the abundance of material that is ever present for discussion between bee-keepers.

The particular truth, as generally accepted, that I wish to show for western Iowa at least, largely an error, is this: It is generally believed that the dandelion is a honey-plant; but years of close observation have convinced me that the *willow* should be given credit for the honey that the dandelion is supposed to furnish. The dandelion furnishes plenty of pollen, and possibly a little nectar, but the native "creek willows" are the chief producers of the "dandelion" honey.

I was first led to notice this by observing heavily-loaded bees entering the hives late in the afternoon when the dandelions were closed. While watching thus, with the thought that perhaps there were dandelions in damp or shady places that stayed open until evening, I noticed that the pollen the bees carried, as well as the dust on the underside of them, was of a slightly different shade of yellow from the pollen gathered from the dandelion. The latter is of a darker shade of yellow than the flower; whereas the pollen from willow is exactly the color of the flower of the dandelion.

As soon as I noticed this, I recalled hearing the peculiar hum bees make going in large numbers to a certain foraging ground which I had noticed that day while plowing between the apiary and a creek where a number of these willows grew. I also remembered Mr. Doolittle saying the willow was a very abundant yielder of nectar, so I went immediately to the willow trees, and sure enough they were full of bloom, and bees with the identical kind of light yellow pollen I had seen going into the hives.

The first year I noticed this there was an extra good willow bloom, also a good heavy crop of dandelions. The scale hive showed a gain of 4 pounds one day, and for several weeks showed more or less gain. The entrances were all yellow from the bright dust of the willow bloom. There were plenty of bees on the dandelions for an hour or two in the forenoon, but there was no slacking off when they closed about noon, as they do on good, warm days.

But the additional evidence that fully convinced me was that no matter *how fine* the dandelions were, or *how good* the weather, *if* there was a poor bloom on the willows, and bees did not work on them, there was never any dandelion honey, nor any gain in the scale hive weight from them. But I have never seen a failure of honey coming in every good day if there *was* a good bloom on the willow, no matter whether dandelions were good or not.

I do not say dandelions are worthless, as bees get some pollen, and a good colony *might*, with *favorable weather*, make a living from the dandelions. But I *do* claim the willow gives the bulk of the honey credited to the dandelion, and a good colony, with favorable weather, will build up strong and seal the tops of the brood-combs with willow honey frequently.

This may not be true in other localities, but it is true for western Iowa. Yet I have met old bee-men here who accepted the orthodox view. It matters not so much *which* yields so the bees get the *honey*. Yet some appreciate what the poet says:

> "Truth springs like harvest, from the well
> plowed fields,
> Rewarding patient toil, and faith and zeal.
> To those thus seeking her, she ever yields
> Her richest treasures for their lasting
> weal."

Dunlap, Iowa.

DR. MILLER'S ANSWERS

Send Questions either to the office of the American Bee Journal or direct to
Dr. C. C. Miller, Marengo, Ill.
He does NOT answer bee-keeping questions by mail.

Moths—Keeping Comb Honey

In this country we are troubled a lot with moths, and in a very short space of time anything exposed in the way of comb honey or wax will be entirely destroyed. We have produced nothing in a commercial way but extracted honey in the past, but the country is becoming settled with a better element that can afford the luxury of comb honey. I would like the simplest and best way to store section honey to keep out the moths and other insects, moisture, or, in fact, anything that is most likely to spoil its sale.

Cuba.

Answer—Years ago I had lots of trouble with sections becoming wormy, the eggs of

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the moth being in the sections when taken from the hive. I brimstoned the sections perhaps two weeks after they were taken from the hive, and then two weeks later to kill the little fellows that had not yet hatched out at first fumigation. Then there was no further trouble. Italian blood was the cure for that, for since introducing Italians I have not needed to fumigate. It is possible, however, that even with Italians there may be trouble in your climate. If so, the sections should be treated with carbon disulfide as soon as convenient after being taken from the hives. That kills eggs as well as larvæ, and no second fumigation will be needed. Then after that there should be no trouble if the sections are kept in a room preferably ventilated and more or less exposed to the heat of the sun.

Keeping Old Combs

Is there any way to keep old combs until enough accumulate to press? It seems to be quite a task to keep them from the moths without keeping them in an air-tight box with bisulfide of carbon. Could I keep them in a barrel with water? LOUISIANA.

ANSWER.—I have very little trouble keeping combs, but it may be very different in your southern climate. If a colony dies in winter, the combs are practically certain to become wormy when weather becomes warm enough, or if a comb is taken from a colony, it is the same thing. But if that set of eggs and larvæ are gotten rid of, the combs will not very likely be disturbed if they stand in a hive all summer long, especially if spaced apart pretty well. In a cellar they are safe, after fumigation, all summer long, and even if not fumigated, the "worms" will develop very slowly in the cellar.

But it may not work that way with you. You might keep them as you suggest in a barrel of water after being fumigated with carbon disulfide, but a barrel would hold only a few combs. You could, however, warm them in the sun or otherwise and then mash them down into balls, in which shape a barrel would hold a lot. Or, you could put the balls in tightly-sealed paper bags. Also you might have a solar extractor into which you would throw pieces of comb as fast as they accumulate, saving the slumgum, which would take little room, until you were ready to press it.

Transferring

An uncle has 4 colonies of bees in box-hives, equal in size to a 12-frame Langstroth hive. He wanted them transferred, and offered me the strongest colony of the 4 if I would transfer them.

I am an enthusiastic beginner, and like all enthusiastic beginners, likely to have over-confidence. The first thing to do was to make a neat little forcing box, and then gently lift the box hive from its stand and carry it about a rod, as per directions, and turn it upside down, placing the forcing box on top. I was greatly elated, for scarcely an angry bee flew out. Now came a period of drumming on the old hive, and anxious glances at the watch, with an occasional peep into the box. We drummed for an hour, then carefully raised the forcing box and looked in, and, lo! there was about a dozen bees in the forcing box. The rest were clustered, part on top of the combs and part between the combs near the top. Now the question is, why didn't they go up into the forcing box? Will you please help me out?

The uncle is rather "old fogy," and when the bees wouldn't enter the forcing box he was ready with his "I told you so," which somewhat discouraged me. While only a beginner, I have had considerable experience with bees, but never transferred any. I gathered up all my old bee journals and books, and read everything I could find, but other bee-keepers' experience seemed to fail on this stubborn colony. I propose to try to drum them again, and if they won't drum out, break the old hive open and cut the bees and combs out together.

Would you advise transferring them now, comb and all, or during the white clover flow, and use Heddon's short method? Wouldn't the Heddon method answer the same purpose as the shook swarming process? Of course I would use full sheets of foundation if I used the Heddon method. WEST VIRGINIA.

ANSWER.—It is quite possible that you were too gentle in your drumming. Perhaps also you did it in cool or cloudy weather. Some say the bees go up better if the forcing box be not closed down tightly, but merely resting on one edge and left about half open. In either case, if the bees persisted in remaining on their combs in spite of smoke and drumming, you could proceed to cut open the box and cut out the combs just as if you had drummed out the bees, smoking and brushing them out of the way both before and after cutting out the combs, which is just what you say you propose to do. Yes, the Heddon short plan is better, and has the same effect as shaking a swarm. Still better, in the opinion of many, is it to wait till the bees swarm, hive the swarm in the right kind of a hive, and 21 days later cut up the old hive.

Transferring Bees

In the March number of the American Bee Journal I read an article telling how to transfer bees. I would like to transfer one of my colonies, but I am lacking the hive-body full of nice combs. As I am only a beginner, what can I do? ILLINOIS.

ANSWER.—You cannot very well use the plan just as given by Mr. Wilder, as there are to be combs in the empty hive above to attract the bees so they will go up of their own accord. To be sure, you can use frames filled with foundation, but the bees will be much more slow about going up into these. But you might drum the bees up, and when nearly all the bees are in the upper hive put the excluder between the two stories. Then in 3 or 4 days you can see whether the queen has laid any eggs above. But I will tell you what you can do that will be ahead of the empty combs. I take it that although you have no empty combs you have one or more colonies in movable-comb hives. Well, get a frame of brood from one of these, replacing it with a frame filled with foundation, and put this in your upper story filled out with foundation. As soon as you find eggs above (but not until after 3 days, for it will be 3 days before all the eggs hatch that you took with the brood) slip in your excluder.

Queens from Queen-Cells

In dividing strong colonies and making new ones by placing young brood in a hive and setting it in place of a strong colony, when is the best time to give a new colony queen-cells? Last season I made several divides. A few days after I discovered in the first one 6 or 8 fine queen-cells which I carefully cut out and placed in other new hives. A few weeks later I discovered those colonies were queenless and dwindling. Apparently the queen-cells had been torn out, and in the fall nearly all those colonies were dead and filled with moths. UTAH.

ANSWER.—To rear queen-cells you should take a time when everything is favorable for brood-rearing, and they should be reared by nurse-bees that are in the humor for rearing queen-cells. A worker changes from a nurse-bee to a field-bee when about 16 days old. I gather from your letter that you put young brood in a hive and set it in place of a colony which you removed to a new stand. The returning field-bees would occupy the brood-comb, and in their desperation would start queen-cells. But feeding young bee is not the business of bees who have graduated from nursing to field-work, and of course you could not expect good work from them. If you had taken from a colony its queen you would have found these bees thus made queenless would have made a different job from that made by field-bees alone.

Less Distance Between Frames

I suggest that instead of the 10-frame hive being made wider, that the frames be made 1-16 of an inch narrower, which would leave ⅝ of an inch more extra room than there is now. So as not to greatly decrease the space between the top-bars it would probably be good to have the top-bars at least 1-32 of an inch narrower than they now are. I believe frames 1 5-16 inches wide would be plenty wide enough. CALIFORNIA.

ANSWER.—I don't believe you would like the plan. If you had loose-hanging frames it might do, and in that case there would be no need to make frames any narrower. But nowadays fixed-distance frames are mostly in use, and 1⅜ from center to center is as little as ought to be allowed. Indeed some prefer 1½. You say, "I believe frames 1 5-16 inches wide would be wide enough." I should say so! I think no one has them wider than 1⅛. Evidently you mean the space from center to center, and, as already said, I don't think you would be satisfied with less than 1⅜. If you should try it, better try it on a very small scale.

Transmitting European Foul Brood in Honey

Are the germs of European foul brood transmitted by honey, or, in other words, would a frame of sealed or unsealed honey with no brood from an infected colony infect a healthy one? ILLINOIS.

ANSWER.—I *think* it would in some cases. I *know* that in some cases it does not. I would have little fear of surplus honey from an infected colony. I would not feel quite so safe about a brood-comb, even if it contained no brood. With American foul brood the case is different. However, in either case I should prefer both honey and combs that had never been within a mile of a foul-broody hive.

Removing Brood to Prevent Swarming

I have 3 colonies of bees. I made my start last spring with one. Two of my colonies are extra good, with good laying queens. They are now very strong. The other colony is not so strong, and very little brood at this date. This being a stray swarm, I fear the queen is old. I can strengthen it with other brood, yet I would like to requeen.

1. When my 2 strong colonies make queen-cells preparing to swarm, could I divide them equally and give the weak colony a frame with one of the queen-cells?

2. If I remove the old queen before giving the queen-cell, would the bees destroy the cell?

3. How would this plan work with the 2 strong colonies: Take from each 3 frames of brood and adhering bees, and place the 6 frames in a new hive, adding 2 frames of foundation? Would the 6-frame nucleus make a good colony?

4. If I should do this would it prevent the strong colonies from swarming as much as equal dividing? What I want is to keep down swarming with as little increase as possible. NEBRASKA.

ANSWERS.—1. Yes, giving the comb with queen-cell would be all right; as to the division see the other answers.

2. No, but you must remove the old queen at least a day before giving the cell.

3. It would make a good colony for winter—of course with the understanding that one or more queen-cells are present—but it would amount to little or nothing for surplus honey, unless from a good late flow, as

all the field bees would return to the old location at the time of the division.

4. No; for taking away 8 frames of brood would not have as much effect as taking away 4. In some cases taking away 3 frames of brood would prevent swarming, especially in a poor season, but in a good season it could not be relied on. At least that is the way of it in my locality, and likely it would be the same in Nebraska. You cannot entirely rely upon taking away brood to prevent swarming unless you take away all but one frame, and that is shake-swarming.

Natural Swarming—Moths

1. What is the object in allowing natural swarming? If the colony is strong, is it not better to make it artificial in order not to lose the swarm?

2. I transferred bees from a box to a frame hive, and after five days found moth-worms on the inside of the hive. How did they get there? The hive was new.

PENNSYLVANIA.

ANSWERS.—1. A person with no experience and little knowledge of bees may find natural swarming easier than artificial. There is no need to lose a natural swarm, at least a prime swarm, if all laying queens are clipped. Yet in general it is better for most bee-keepers to avoid natural swarms—if they can!

2. The worms were in the combs in the old hive, and you transferred combs, worms, and all. If you transferred bees without combs, I give it up.

Surplus Combs Below Brood-Chamber

With a full depth extracting super, would it be any advantage to put the colony with the queen *above* the super with a honey-board between? Would the bees store honey in it at all? I thought perhaps the bees having to pass through the super to get to the brood-chamber they might store some honey earlier than otherwise. IDAHO.

ANSWER.—Bees prefer to store honey above their brood, and with room above you could hardly expect them to store below. Yet in a strong flow I have had them store in a story below. But they will not store below so soon as they will above.

Rearing Queens in Upper Story

I am working my bees for extracted honey exclusively, and use a 3-story hive. Can I requeen my apiary by rearing young queens in the upper story by employing two queen-excluding honey-boards, one over the brood-nest and one under the top story in which the new queen stays? Of course, I must bore a hole in the back of the super from which the young queen can fly. Will I get rid of the nuisance of finding my young queen killed, or at least gone when I take a notion to hunt out the old queen and decapitate her? CALIFORNIA.

ANSWER.—Years ago I was delighted to succeed in the way you outline, but of late years failures have been the rule, so I have given it up. I don't know what makes the difference, unless it be that originally the upper story with the young queen was more isolated. The farther up the top story the better. Indeed, the first time I had a queen reared and laying in an upper story was an accident, and there was not even an excluder in the case. I put 3 or 4 stories of empty combs over a colony to have the bees take care of the combs, and in order to make the bees traverse the whole I put some brood in the upper story—no excluder anywhere. After some time I was surprised to find a young queen laying in the upper story. The bees had reared her from the brood, and it happened that there was a leak under the cover through which she could fly. In my later attempts there has not been so great isolation, and it might be worth while for me to try again. At any rate it is worth your while to try it, keeping in mind to have your upper story high up.

REPORTS AND EXPERIENCES

Fine Prospects in Vermont

I set out 40 colonies of bees March 10. I never saw bees in better shape than they are this spring; those outdoors are in good condition. I think that Vermont losses will not be over 5 percent.

Clover is looking the best I have seen it in years. We are looking for big things this season. MINNOTT C. YOUNG.

Rutland, Vt., May 13.

Bees Wintered Nicely Outdoors

Our bees have wintered nicely out-of-doors. They did splendidly last year. I have a friend in Beardstown who had just one colony of bees last spring. His crop from that one was between $30 and $35, and one super for his family. Now he has 2 colonies to commence the season. Pretty good, isn't it? H. O. BADER.

Browning, Ill., May 13.

Short Crop for the Pacific Coast

There is poor prospect for honey in southern California this year. I have talked with a great many bee-keepers from different parts, and all are of the same opinion, a very short crop; too dry; bees in poor condition, and no swarming along the coast to amount to anything. Here they usually swarm in March. MILO SMITH.

Long Beach, Calif.

Not Very Flattering for Iowa

Conditions here in the bee-business are about as bad as can be. I am not so badly off, as I fed early and late, but still there has been dreadful spring dwindling, owing to warm days and cold evenings and nights.

I have a pretty general report from this vicinity. Mr. ——, of D., was here yesterday, and confesses to a loss of 23 colonies out of 25, "and dose hives yas shust fulled of honey, Doctor."

The prospects are good for a clover flow, but, alas! where are the bees?

A. F. BONNEY.

Buck Grove, Iowa, May 13.

[Perhaps by the time these lines appear in print, the bees will be booming, and the Doctor will be anxious to recall his letter.—EDITOR.]

California Outlook Poor

The season in southern California proves still less promising as time goes on. Oranges, that most of us counted on for our surplus this year, are almost all past blooming, and the result is a great disappointment to most of us. I will ship a car of nuclei the last of this week to the alfalfa sweet-clover section of Utah. I hope to get a crop there to make up for the disappointment down here.

Many ranges will hardly furnish enough stores for the bees to winter on. One of the best seasons I have seen in California followed one of the poorest. So be an optimist and hope for better things to come.

Corona, Calif., May 25. L. L. ANDREWS.

In Minnesota

Bees are bringing in some honey, but it has been so windy that they can hardly fly, and very cold in the mornings so they cannot fly early. CARL ZEH.

Mankato, Minn., May 11.

Getting Bees in Pound Cages

I notice that there have been numerous inquiries as to how to get bees in cages. The best way I have found is to take a sheet of heavy glazed paper about 3 feet square, and shake the bees on it (laying the paper on the ground), then pick up by the two sides and give a quick jerk standing the cage on end with end open), and you can pour them in in less time than it takes to tell it.

Mayhew, Miss. D. D. STOVER.

The Stanley Cage

Noting the enquiry on page 170 of "Pennsylvania," relative to having young queens killed in the openings of the Stanley cages, I have found them only where they were held over too long, in the upper stories or in a shortage of honey, so that they will be neglected.

The cage referred to is the only one that has come to my notice in which the bees will properly incubate, care for, feed, and hold over a virgin queen a limited length of time. I have adopted the same principle on my virgin shipping cages. The queen-rear-

ONE OF THE WINTER YARDS OF L. L. ANDREWS, OF CALIFORNIA.

ing outfit I am now using consists of one cell-bar containing 16 holes with cork plugs to which the cells are attached, and at the end of 9 or 10 days the cylinder cages are slipped over the corks.

Among the thousands of queens I have reared since using this cage, my percentage of loss, as Dr. Miller states, has been exceedingly small, unless from the cause before mentioned. This cage greatly aided me in rearing many premium queens that have brought testimonials by the score.

Chicago, Ill., May 5. ARTHUR STANLEY.

Notes on European Bees and Honey

The bees around this section are almost all wiped out by foul brood, European and American. The former disease is much more malignant. I shall have to get a different breed of bees to withstand the disease. I think I will try the Carniolans; the blacks have not the stamina.

I was in Europe last year, and saw only the black bee in France, Italy and Germany. The apiaries are all small that I saw, and mostly house apiaries. I went afoot from Chamonix, France, to Zermatt, Switzerland, about 100 miles around the Mt. Blanc system. The bees work on clover at Chamonix, and on Alpine roses, which were about 2000 feet above Chamonix. This town is about 4000 feet above sea level, so the bees gathered honey about 6000 feet above sea level and above the timber line.

At this place men were grading for railroad to Mt. Blanc. It starts from Fayette. The men start to work at 4 o'clock in the morning, and receive about 9 cents an hour of our money. It would interest me to know what kind or color of honey they get from the Alpine roses. The honey we had at the hotel was very light and aromatic. I am inclined to think that all honey gathered at high altitude is light in color. We had honey at all the mountain hotels for breakfast, in cities of coast-traveled Europe also. The price of honey ranged from 25 to 40 cents per pound in glass jars—dearest in Italy and cheapest in England.

I think it would be a good plan for all bee-keepers in this country to try to introduce honey at hotels. ROBERT E. YEAGER.

Cameron Mills, N. Y.

Cool in Ontario

We are having very dry weather here now and cool nights. Minimum temperature last night 33 degrees. We need rain to bring on the clover. My bees are working hard on wild cherry blossoms just now. Our Muskoka woods are full of wild raspberries, thimble berries, and a great variety of wild flowers. We are a few miles south of the 45th parallel.

I like the journal very much.

W. H. CROSS.

Gravenhurst, Ont., May 18.

Foul Brood Lessening—Bulletin Does Good

Bees are booming on white clover and raspberries; in fact, Iroquois county is a bee-paradise this year, and foul brood is less. I have inspected 200 colonies, and only 9 were diseased, while last year with a less number there were 75 diseased. This year I find foul brood only with those bee-keepers who say, "I never look at my bees."

The bulletin that our State Inspector, Mr. Kildow, distributed is the best I ever saw on foul brood, for it is as plain as can be made. I took a man in Sheldon, with the bulletin, out to see his bees, and I opened his hives. "You have European foul brood," I said, "look at the bulletin." He looked at the cut, then at his comb, and said, "It is worth ten dollars to me to have it made so plain." Where bee-men take an interest in their bees they are bound to succeed.

Watseka, Ill. JESSE H. ROBERTS.
Deputy Inspector.

The Prime Swarm on Parent Stand

I notice in a recent issue of the American Bee Journal, the plan advocated of putting the prime swarm on the parent stand with the parent colony beside it, and then later moving the parent colony away, for two reasons: to avoid secondary swarms and to make the prime swarm strong. I used the plan to some extent during the summer of 1912, and it is good, but there are exceptions.

One colony on which the plan was tried was extra strong. It had supplied brood to other colonies, and to start a strong nucleus, so that in the latter part of June, with two full-depth extracting bodies above an excluder, I did not expect it to swarm at all. But June 28 a swarm issued. I did not think it would do very much, though hived on a full set of combs, so I set it on the stand of the parent colony with the latter beside it, giving one of the supers to each.

The second evening, as I did not want to weaken the parent colony too much, I took it away entirely, having destroyed all the queen-cells I did not want, but leaving two or three for a short time.

The next day, just 50 hours from the time the prime swarm issued, the old queen came out again with a swarm. Giving them a sprinkle while they were clustering, I made a hasty examination of the hive they had left, and found 2½ frames of eggs; everything else plugged with honey above and below, and a medium-sized colony of bees left. Well, I was not quick-witted enough to do what should have been done, so I hived the swarm that came out—extra large this time—on a full set of foundation and an empty super above, and put them on a new stand. I exchanged one of the frames of eggs for a frame of brood with a queen-cell, and that bunch built up into a nice colony.

What I should have done was to put the swarm with queen back on the old stand, put the eggs in, and stack up extracting bodies three or four high. That extra swarm cost me 100 pounds of honey.

WESLEY L. ROBERTS.

Lime Ridge, Wis., May 13.

[In the above case, the swarm was taken away, instead of the parent colony. The result was sure to be different, as it left the parent colony much strengthened. Those divers experiences are very good information for beginners.—EDITOR.]

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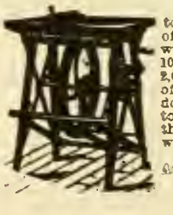

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GENTLEMEN:—I should like to say a few words in favor of the ball-bearing Root Automatic Extractor, as I believe it is as near perfection as it can be. This machine runs so easily that a few turns to get it up to speed is all that is necessary; and the men, while using the No. 17, which I formerly had, could average only 1000 lbs. per day, while with this machine they can average 2000 lbs. with but one additional man. No apiary can afford to be without one of these machines.

I feel like congratulating The A. I. Root Co. for making an invention that is such a satisfaction, financially to the honey-producers' interests.
B. B. HOGABOOM, Elk Grove, Calif

—HERE ARE A FEW MORE—

A word about the power extractor I purchased from you through H. L. Jones, of Goodna, I found it to work very satisfactorily, and it will do all it is claimed to do and more. I use the gasoline engine for several purposes besides driving the eight-frame extractor, such as driving the washing-machine for the lady of the house, and corn cracking and grinding. I consider it one of the best speculations I made in connection with the apiary.
F. C. GOLDER, Pittsworth, Queensland.

Yours of the 16th, also the brake-band for power-extractor, came to hand. Thanks for sending it so promptly. This is my second season with the power extractor. I would not like to be without it now, even if I had only fifty colonies.
DAVID RUNNING, Grindstone City, Mich., July 10, 1910.

I received the extractor I ordered of you some time ago. It arrived in good shape. I set it up and extracted 143 quarts of honey, sold it at 35 cents a quart. The extractor is just fine—does the work completely.
F. D. KING, Athens, Ohio, Aug. 16, 1912.

The engine I got of you this spring has done fine. We ran it all fall, and never had any trouble at all.
V. V. DEXTER, North Yakima, Wash., Jan. 19, 1911.

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Of Moore's Strain of Italians

Ready June 15

Untested, $1.00; 6 for $5.00; 12 for $9.00

April 28, 1913.

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Dear Sir:—The 30 queens I got of you in 1911 were the best queens; built up the fastest, and gave the largest yield of honey I have had in twenty years of bee-keeping. My average was 100 lbs. to the colony in 1912, and I lost a part of the flow for want of super room.

Yours very truly,
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ITALIAN BEES

Choice Home Bred and Imported Queens

Reared in full colonies

Prices for May:

One untest. queen	$1.10
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Safe arrival guaranteed. For description of each grade of queens send for free catalog.

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PRODUCE WORKERS

That fill the supers quick
With honey nice and thick.

They have won a world-wide reputation for honey-gathering, hardiness, gentleness, etc. Untested queens, $1; six, $5; 12, $9 00. Select untested, $1.25; six, $6.00; 12, $11. Safe arrival and satisfaction guaranteed. Circular free

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From Improved Stock.

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3-Band, Golden, 5-Band and Carniolan

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Line Bred Carniolan Queens!

Carniolans winter with their colonies most populous; build up best in the apiary; enter supers more readily cap their Honey very white; are gentle, and no more inclined to swarm than Italians, if properly managed. Ask for **FREE** paper " **SUPERIORITY OF THE CARNIOLAN BEE,**" exmlaining these bees more fully, and best Aanagement for comb and extracted honey. n limited number of nuclei and 8-fr. colopies for sale at end of June.

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The Robbers Disturb You When Feeding

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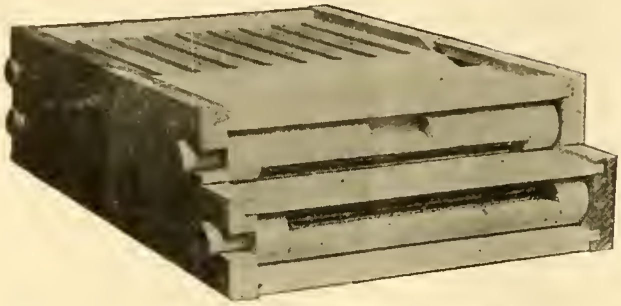

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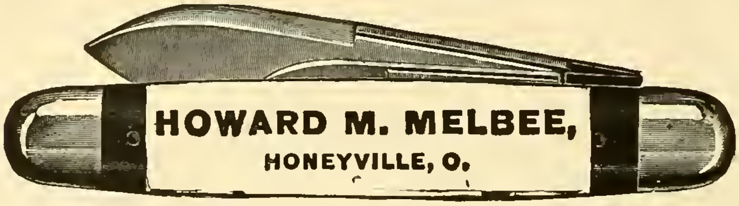

Your Name and Address will be put on one side of the handle as shown in the cut, and on the other side a picture of a Queen-Bee, a Worker-Bee, and a Drone-Bee. The handle is celluloid, and transparent, through which is seen your name. If you lose this Knife it can be returned to you, or it serves to identify you if you happen to be injured fatally, or rendered unconscious. The cut is the exact size; it is made of best steel. When ordering be sure to write exact name and address. Knife delivered within two weeks after we receive order.

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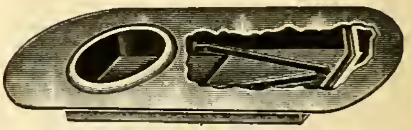

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You can get Bees, Queens, and Bee-Supplies and save time as well as money.

Nuclei	1 Fr.	with	Untested Queen	$1.75
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1 Untested Queen, 75c; 6 for $4.20
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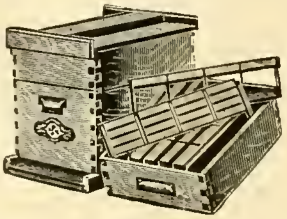

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FOR SALE.—The 3-band queens are of the A. I. Root Co.'s improved long-tongued bees which have proven themselves to be the best of honey-producers. I use the Doolittle and Miller plans for queen-cells. One untested queen, 75 cts; 6 for $4.00; 12 for $7.50; 25 for $13.50; 50 for $25.00; 100 for $45.00. Double this price for tested queens. One-frame nucleus, $1.50, 2-frame, $2.50; 3-frame, $3.50. To each nucleus add the price of queen. No personal checks accepted

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Three-Band and Golden Italians, Caucasians and Carniolans

July 1st to October 1st	1	6	12
Untested - - -	$ .75	$4.25	$ 8.00
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Tested, $1.50 each; and Select Tested, $2.00 each.

All queens are reared in strong, vigorous colonies, and mated from populous nuclei. Instructions for introducing are to be found on the reverse side of the cage cover.

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Do you want to learn modern bee-keeping upon modern principles? Upon principles of magnitude? Do you want to know how to Morganize bee-keeping? Do you want to know how one man by the turn of his hand started 50 bee-yards, turning honey into one modern reservoir? It was but 15 years ago we were told one man could find all he could profitably do with one bee-yard. Now comes this modern giant of beedom managing 50 yards that contain an aggregate of 3000 colonies.

The Bee-Keepers' Review has made arrangements with this giant of modern methods of honey-production, a method that will revolutionize bee-keeping of the future. A series of ten articles that will begin with the July number of THE BEE-KEEPERS' REVIEW, are from one of the very best known writers of the day.

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Untested	- -	$1.00
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Breeders $3 to		$5.00

We have 50 Golden and Three Band Breeders. Can mail from April 1 to 15. Place your orders now. Address,

JOHN W. PHARR,
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THE FAMOUS TEXAS QUEENS

TALIANS! CARNIOLANS! BANATS!

Are Ready to Mail

PRICES:

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We Make a Specialty of Manufacturing SECTIONS

They are the Finest in the Land—None Better.

Our Prices will make you smile. We want to mail OUR BEE-SUPPLY CATALOG to every bee-keeper in the land. It is FREE. Ask for it.

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Will be ready to take care of your queen orders, whether large or small, the coming season. Twenty-five years of careful breeding brings Laws' queens above the usual standard; better let us book your orders now.

Tested queens in March; untested, after April 1st. About 50 first-class breeding-queens ready at any date.

PRICES: Tested, $1.25; 5 for $5.00; Breeders, each $5.00. Address

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Comb-Honey Producers

Send for illustrated circular of new Rauchfuss Combined Section Press and Foundation Fastener. Sold with guarantee to give satisfaction, and delivered anywhere in U. S. on remitiance of $3.00.

Colorado Honey-Producers' Association
Denver, Colorado

HONEY AND BEESWAX

CHICAGO, June 19.—Our market is entirely bare of comb honey of the best grade, and very little of the poorer grade is to be found. No 1 to fancy white comb will bring 17@18c per pound upon arrival, and until the traders each get a small supply, consignments will sell promptly. There is no change in the price of extracted from recent quotations. Beeswax also steady.
R. A. BURNETT & CO.

CINCINNATI, June 19.—This market is in good shape to receive the new crop of honey which will be a big one in this part of the country. Our advice is that the early bird will get the price, and those who wait will be sorry for it.

We can use quick shipments of comb honey, and are selling what we have at from 15@16½c a pound by the case; some cheaper at wholesale. Extracted honey for table use is selling at 7½@10c a pound, and amber honey in barrels at 6@7½c a pound, according to the quality and quantity purchased. For choice bright yellow beeswax we are paying 30c a pound delivered here.
THE FRED W. MUTH CO.

KANSAS CITY, MO., June 19.—The first shipment of new comb honey has made its appearance, and sold on arrival at $3 75 per case of 24 sections for No. 1. The demand is good. The demand for extracted is light Supply not large. We quote white at 8@8½c per pound. Beeswax, per pound, 25@28c.
C. C. CLEMONS PRODUCE COMPANY.

INDIANAPOLIS, June 19.—The market is practically bare of fancy white comb honey. No. 1 white is selling at 16@17c per pound; amber comb in slow demand and at varied prices. Best extracted sells at 11@12c per pound in 5-gallon cans, according to quantity at one shipment. Beeswax is in good demand, and producers are being paid 30c per pound cash. WALTER S. POUDER.

DENVER, June 20.—No more comb honey to offer. We quote extracted honey in a jobbing way at the following figures: White, 9c; light amber, 8c; strained, 6¾@7c. We pay 28c in cash per pound, and 30c per pound in trade for clean yellow beeswax delivered here.
THE COLO. HONEY-PRODUCERS' ASS'N.
Frank Rauchfuss, *Mgr.*

CINCINNATI, June 20.—There is very little doing in honey, both comb and extracted No new honey has yet arrived General conditions are good for a big crop.
C. H. W. WEBER & CO.

BOSTON, June 20.—Fancy and No. 1 white comb, 16@17c per pound. Fancy white extracted in 5-gallon cans, 11@12c. Beeswax, 30c. BLAKE,-LEE COMPANY.

NEW YORK, June 20.—There are no new features in the condition of the market. New crop of comb honey from the South is beginning to arrive in small quantities, and finds ready sale at from 14@16c for No. 1 and fancy white, and lower grades at from 12@13c. Extracted honey decidedly dull, and while there is a fair demand for strictly first-class quality, amber and light amber are neglected. West India is arriving in large quantities, and on account of the slow demand, prices have been gradually declining, and choice stock is now selling at around 65@70c per gallon. We are advised by our California shippers that there will be no sage honey to speak of this season, and prices on others, such as alfalfa and orange, have not been established as yet for the new crop. Beeswax steady at from 31@32c.
HILDRETH & SEGELKEN.

SAN FRANCISCO, June 20.—There is very little of the old comb honey on the market, and we are promised some of the new very soon, and have had some new extracted honey in very small quantities. The demand for extracted honey has been better than for some time, and the crop so far in this section will be limited. Fancy comb honey at 14@15c. Water-white extracted at 9@9½c; light amber, 7½@8c; amber, 6½@7c dark, 5@6c. Beeswax, 24@30c per pound.
JOHN C. FROHLIGER.

LOS ANGELES, June 20.—Stocks of white extracted honey on the coast are entirely exhausted, and are not quotable at any price. Light amber extracted honey is in light supply, and is quotable in carload lots at 6¾c f. o. b. Coast. Comb honey is in very light supply, and there is scarcely enough left for local consumption. Beeswax is selling to eastern buyers at about 30c per pound.
HAMILTON & MENDERSON.

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$1.00 EACH, $9.00 PER DOZEN.
Queens are reared by as good a method as anybody can rear Queens. My stock is hearty and fine honey-gatherers. All queens shipped by return mail within 24 hours after I receive the order.
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CELLAR WINTERING

WE are glad to call the attention of our readers to a long article on this subject to appear in the American Bee Journal, beginning with the August number, and written by

DR. C. C. MILLER

Dr. Miller himself a firm advocate of cellar wintering, gives the results of his experience and experiments along this line. Every bee-keeper should read what he has to say. Urge your neighbor bee-keepers to subscribe to the Journal also. It will be **interesting, instructive,** and written in the **distinctive style** of all of Dr. Miller's contributions.

The Article will be followed with comments and discussions by **Dr. E. F. Phillips,** of the Government Bureau of Entomology, and by **Dr. Miller.**

Don't miss it. Don't let your neighbors miss it.
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AMERICAN BEE JOURNAL

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AUGUST
1913

AMERICAN
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OLDEST BEE PAPER IN AMERICA
BEE JOURNAL

PUBLISHED MONTHLY BY
American Bee Journal
1st Nat'l Bank Bldg. Hamilton, Illinois

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10 pound pails in crates of 100 - - - - -	$7.25	$6.75
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	In lots of 10.	In lots of 100
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60 " " " one " " - - - - -	48c	40c

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AMERICAN BEE JOURNAL

(Entered as second-class matter at the Post-Office at Hamilton, Ill., under Act of March 3, 1879.)

Published Monthly at $1.00 a Year, by American Bee Journal, First National Bank Building

C. P. DADANT, Editor.
DR. C. C. MILLER, Associate Editor.

HAMILTON, ILL., AUGUST, 1913

Vol. LIII.—No. 8

EDITORIAL COMMENTS

Ordering Queens from Europe

A number of our friends have written asking that Mr. Dadant take orders for queens to be sent to them from Europe. He has not gone there to buy bees. He goes only to examine the bees of different countries and report in the American Bee Journal in as impartial manner as possible. He hopes to make his information useful to all the bee-keepers of America.

Distance Drones Fly

Lehrer Kiefer says, Pfaelz. Bztg., page 6, that in 1871 some 70 to 80 colonies of Italians were at Steinwenden, and no other Italians far and wide, yet June 15, at Schwedelbach, 3 miles distant in a straight line, where there was an apiary of pure blacks, not a few Italian drones were seen flying in and out of the hives. It is generally believed, is it not, that queens fly farther than drones? If that be so, it seems there can be no certainty against impure mating if other bees be within 6 miles. For all that, it may be true, as some claim, that *generally* drones and queens do not meet at a greater distance than 1½ or 2 miles.

Size of Magazines

The popular magazines are in general of two sizes: a large size about 16 by 11 inches, and a small size about 10 by 6½. Until very recently the American Magazine was of the smaller size. Its publishers realized that with this form some desirable results could not be obtained, especially in the way of illustrations. But to enlarge to 16 by 11 would give the unwieldy size of the Ladies' Home Journal, Woman's Home Companion, etc., a size especially disliked by many readers.

After much experimenting of a somewhat expensive character, the American Magazine has settled upon 12⅛ by 8⅜ inches as the ideal size and form for best results, and has received many congratulatory letters from delighted readers upon this change of form. The special point of interest in the matter is that for years, without any parade about it, the American Bee Journal has been appearing in its present well-known form, which is precisely the same in width as the American Magazine, and only ⅝ of an inch shorter. Whatever other improvements may be striven for, perhaps there is no chance for improvement in the matter of size. When bound it makes a book of the same size as the Century Dictionary.

Crosses of Bees

In Pfaelzer Bienenzeitung it is asserted that the first cross of two different races of bees is more vigorous than either of the parent colonies, but that with the second generation degeneration begins. The first part of that assertion has been the generally received opinion in this country for many years. J. E. Crane does not keep pure Italians, but constantly introduces pure Italian blood, from which he rears young queens to meet his dark drones. Thus he has a first cross for a working force, one of the parents being of pure stock. That there is degeneration after the first generation is likely true where bees are left to their own devices, but there are not wanting those who claim to keep up the vigor of the first generation, and even to improve upon it by careful and continued selection in breeding.

Moth and their Development in Combs

An interesting discussion has taken place in "L'Apiculture Nouvelle" concerning the presence of moths in combs. Mr. Audrain holds that if the frames contain combs of pure wax only, without pollen, there is no danger of moths. He reported having repeatedly kept combs all summer where the moths could have access to them, without danger, whenever these combs were free of pollen. Foloppe Brothers, who are very accurate observers, take exception to this statement, and hold that although the moths need nitrogenous food in order to develop, they may find such food in other matters than pollen, as in the dejections of the bees, or in the wood of the hive.

It is true that moths need nitrogenous food to perfect their development. They can live but a short time on wax. As Mr. Audrain states, they cannot live on cakes of pure beeswax. But if two cakes of wax are laid flat on one another and they contain some residue, whether this be propolis, dead bees, cocoons or pollen, the moths may harbor and thrive in them, and will bore their way quite deeply into the wax. We have seen thin cakes of wax shipped to us from the warm southern countries pierced through with the galleries of the moth.

Our comb-honey rearing bee-keepers who know the bad effects of a single moth larva upon filled combs are convinced of the necessity to protect these combs entirely from any incursions of wax moths.

Dry, clean, new combs may be preserved in comparative safety, if exposed to air and light. In a honey-room combs may be hung safely between the joists, if not placed close enough together for the larvæ to reach from one to another. But old combs, whether they contain pollen or not, will be surely riddled, if left where the moths may reach them.

In the climate of Illinois, where the hermometer reaches down to —20 degrees Fahrenheit, combs that are preserved through the winter in a room without fire will be entirely free from moths. It is only where the combs have been protected from the cold, in colonies that live through, or in hives of which the bees have died at the end of winter, that the moths reproduce. So the careful bee-keeper who does not leave any combs exposed in beeless hives with entrances open during the warm season, and who does not bring into his bee-house any combs of doubtful origin, needs fear the moths but little. However, when his comb honey is harvested, it will be advisable for him to use sulphur or bi-sulphide of carbon from time to time, as the eggs of the moths may hatch in some corner and soon do a great deal of damage.

The progressive bee-keeper who looks after his bees and his empty combs, his sections of honey, etc., finds the moth a blessing instead of a curse. Were it not for the moths, the combs of hives that have died from foul brood, in neglected apiaries, would remain a constant danger. The moths remove that danger before the season is over.

A Letter from the Editor

Here we are at Rouen, one of the oldest cities of France, after 10 days of absence from home. We had a fine trip across on the "France"—six days and two hours on the way. No bad weather, though we had rain and a little swell one day.

Here, in Rouen, lives Mr. Crépieux, who was the editor of the International Review of Bee Culture after Mr. Bertrand. He is now a contributor of L'Apiculture Nouvelle. He has 60 colonies 4 miles from Rouen, and in 1911 harvested nearly 8000 pounds of white honey, mainly sainfoin (*Esparcet*), wild mustard (*Sinapis arvensis*) and basswood. He says the bees get nothing from white clover here, but when we went to his country place, I saw a number of bees on the white clover, and it looked very much as if they were getting nectar from it, for they stopped quite a while on each bloom. He has a two-story house apiary open on the north and the south. He ascertained that the bees of the lower rows suffered more in winter flights than those of the upper rows, but found very little difference between a north and a south exposure.

We must remember that they have a mild winter here; that ice rarely gets over 3 inches thick. Their experience is that the bees take flight at 48 degrees Fahr., and not at a lower temperature. Of course, this is *in the shade*, and as the sun is much stronger in Illinois, probably his tests would not work with us.

Mr. Crépieux is a very eminent graphologist. His testimony, in the recognition of handwritings, in courts, has often been quoted as almost infallible.

The honey crop is already quite good, many supers being filled, but I am told that this is not the rule throughout the country this year. I will learn more as I go.

I had the honor and pleasure of meeting here the renowned Dr. Carton, the man whom we quoted in the American Bee Journal of September, 1912, as naming alcohol, sugar and meat the "three deadly foods." He is a vegetarian, and very interesting to hear, though many of us might not agree with his views, expressed in forcible language, and very clearly. He is a bee-keeper, and has his own explanation concerning the general spread of foul brood in the United States. This is based on his studies of bacteriology at the Pasteur Institute of Paris in 1900. He has promised me an article, which will surely be interesting. He is the author of several works of note on medical subjects.

If this magazine were not a special publication, I might digress from bee-culture and tell about "old Rouen." It is a beautiful city with about 80 churches, some of which are magnificently sculptured. But the *old* part of the city is horrid. Imagine streets where two cannot pass side by side, where you can touch both walls without much stretching the arms, where houses, built 400 or 500 years ago, have bulged out so as to threaten falling, and have been braced with iron plates and bolts, which already show the rust of centuries.

Magnificent sculptures are found behind the most disgusting looking walls, and priceless ornaments of stone look down upon dark, narrow lanes. To an American these things look more like a dream than the reality.

We visited in Rouen the square where Joan of Arc was burnt at the stake. Fresh flowers are almost constantly brought to the foot of her statue by enthusiastic admirers. The exact spot where she was burnt is shown by a marble slab in the pavement. July 5.

Robbing

July and August are the worst months for robbing in this latitude, especially when there is a dearth after a heavy crop. Bees do not appear to ever be satisfied with plenty, and a wealthy colony will mercilessly rob a weak or queenless one.

Prevention is better than cure. Weak colonies should be carefully watched, the entrances kept sufficiently reduced to enable them to defend their combs. The combs that the colony cannot cover should be removed, or it is well to strengthen it by exchanges of dry combs for combs of hatching bees from populous colonies. In case of robbing, a weak colony of bees may readily be put in shape to defend itself by giving it, late in the evening, a quart or so of young Italian bees which never yet had a flight. The Italians are much better than our common blacks to fight robbers and keep out the moth. After supplying young Italians to a weak colony, you will see them act as guards, the very next day.

A bunch of loose grass, thrown over the alighting-board, at the entrance, is often sufficient to enable the hive-guards to defend the colony, for they station themselves among the blades and easily arrest the intruders, unless the colony is completely demoralized.

Colonies that have swarmed must be examined to make sure that they have a laying queen, else the robbers and the moths will make short work of them.

Early Queens

We had so many evidences that queens reared very early are poor, that we gave up trying to rear them until the starting of the clover flow. That makes it pretty late. With us the clover harvest is likely to begin some time during the first ten days of June. Suppose it begins the 5th, and on that day a young queen is started from a larva a day old. She will hardly be laying before June 30. That seems a long time to wait, if in the meantime one or more colonies go queenless. Better, however, to wait until that time than to have a worthless queen. To be sure, it sometimes happens that by accident or otherwise a queen is missing, and the first we know of the case, is that a virgin has been reared by the colony. It seems too bad to kill such a virgin, but if it is very early her death is the best thing for us if not for her. When we yield to the temptation to spare her life, we are likely to regret it.

We had one case of that kind this year. April 22, upon opening No. 66, we found no unsealed brood. Instead of breaking up the colony at once, we temporized by giving it a frame of brood in all stages. The hive was not opened again for 15 days, when a fine-looking virgin was found. Instead of promptly dispatching her, we again yielded to temptation and spared her. Eleven days later she was found in the hive, just as handsome as ever, and laying just as many eggs as ever—that is, none. As she was then probably 2 weeks old, the chances were that she would never amount too much. and as a ripe queen-cell happened to be on hand, the queen was given her quietus and she was replaced by the cell. Eighteen days later we looked to see if the young queen was laying. A few scattering eggs were found, and then a patch of drone-cells in which we found eggs, 4, 5, or more to the cell. That settled it. Laying workers!

This is not a thing to be proud of and is not held up as an example for imitation, but as a frightful warning. Here were 2 weeks fooled away in the vain hope of rearing a queen ahead of time, the bees doing nothing but dwindling all the time. If we had broken up the colony in the first place, giving the bees to other colonies, instead of dwindling away, they would have increased perhaps double.

Within the past few years dandelions have increased to such an extent that one ought to be able to rear queens during its bloom, especially with the aid of fruit bloom. We made a little effort at it this year. May 7 the start was made, and of the cells started we utilized 6. Just half of these were failures; the other half succeeded to laying queens. How good these queens are remains to be seen. But we are not greatly encouraged about rearing dandelion queens, and may have to be satisfied if we can succeed in having young queens laying about a month after the very first clover blossom is seen.

We believe more and more that the South is the country for early queens.

MISCELLANEOUS NEWS ITEMS

Rearing Queens from Foul-Broody Colonies.—The following suggestions were received from a correspondent in California. There is no little danger from letting such a statement go unchallenged. It was referred to Dr. Miller for his opinion. We append the inquiry and the editorial on it:

> "Did you ever stop to consider that it would be impossible to rear queens in an apiary that was affected with foul brood?" How could the larvæ or the cells be accepted if the brood from which it was taken be so impregnated in any way with this disease? The queens would manifest this as readily and as quickly as the brood. The queen-breeder must surely have his colony (breeding queen) absolutely free from this pest or he would never for a moment be able to rear a single queen.
>
> It is not the intention of the writer to create any argument, but on the surface it looks very plain and clear that a queen rearer or breeder would have to close up if foul brood was prevalent in his apiary.

It would be a fine thing if it were true that "it would be impossible to rear queens in an apiary that was affected with foul brood." In that case there would be no temptation for an unprincipled queen-rearer to send out queens, and there would be no danger of spreading disease in that way.

Unfortunately, larvæ in queen-cells follow the same rule as larvæ in worker-cells; some of them are affected and some are not, and whatever proportion of worker-larvæ come to maturity just that proportion of queen-larvæ may be expected to come to maturity. So in an apiary badly affected by foul brood just as many queens can be reared as in a healthy apiary. To be sure, not so many virgins can be reared from the same number of cells; but the queen-rearer is not restricted in the number of queen-cells started. If half his cells fail, all he has to do is to start double the number of cells.

The question is: Would any honest man send out queens from a diseased apiary? C. C. M.

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Our Front Cover.—On our front cover we reproduce a photograph of a typical apiary in Illinois. Mr. L. L. Ness, the owner, is a progressive bee-keeper. He keeps only Italian bees.

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The Panama-Pacific Exposition.—Mr. Thomas G. Stallsmith, formerly of Ohio, has been appointed Chief of the Department of Agriculture at the Panama-Pacific Exposition. Under his jurisdiction will come the department of Apiculture. In a recent letter to this office, Mr. Stallsmith announced that this was to be one of the strong departments of the Exposition, owing to the fact that the California bee-keepers are already discussing the placing of exhibits. Any one who is at all interested in obtaining information about exhibits would do well to get in touch with Mr. Stallsmith. Letters may be directed to him at the Exposition Building, San Francisco.

THOS. G. STALLSMITH, OF THE PANAMA-PACIFIC EXPOSITION.

The Exposition will be held from Feb. 20 to Dec. 4, 1915.

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Fined for Failure to Have Bees Inspected.—An apiarist of southern California has paid dearly for failure to observe the ordinance of Tulare county in regard to the bringing of bees in that county. He shipped three carloads of bees into Tulare county, and proceeded to station them amidst the orange groves.

No notice of the shipment was given the inspector of apiaries of Tulare county, as required by the ordinance. Hearing of the arrival of the bees, the inspector filed a criminal complaint against the owner, who was very much astonished to find that the penalty for shipping bees into the county without notifying the inspector is a fine of not less than $300. However, he pleaded guilty, and was fined the full sum.

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Autobiography of A. De Rauschenfels.—The following is an autobiography of A. DeRauschenfels, retired editor of L'Apicoltore:

You desire the story of my life. I have no marvelous record in the apiarian field. I have not discovered any fundamental law; have not invented any new hive or implement; neither have I kept as many colonies as your great American producers have done, but I take pleasure in responding to your courteous request.

I was born Feb. 28, 1828, at Lienz, in the Austrian Tyrol, and received my education in the University of Innsbruck. In 1847, the words: "Monarchy is in peril, all Italy to arms," caused my departure for the army with my fellow students, and I was enlisted in the regiment of Imperial Tyrolese Cacciatores. I fought in the streets of Milan in 1848, and the following year in the battle of Novara. In 1852, I was promoted to the rank of officer, and in the barracks saw the dark side of the life of a soldier. I concluded that this was not the right pursuit. I resigned and established myself in the "garden of Europe," as is called this country of rich plains and admirable vegetation, which produces everything, from the knotty oak to the palms of the Orient.

A. DeRauchenfels.
Photograph by Arnaldo Cotti.

Living in the country, I was attracted by apiculture. In 1869, after having read the works of Dzierzon and Berlepsch, I commenced bee-keeping with 6 colonies, which I transferred from the common village hive into movable-frame hives of the German pattern. In a few years, with the addition of natural swarms, artificial divisions, and the purchase of more common hives, I raised my apiary to 100 colonies, and later to about 200, a very large number, at that time, in Italy, for a follower of rational bee-culture, which was yet in its infancy.

I soon began contributing to L'Apicoltore, the organ of the Italian Association. I also wrote for a German journal, discussing questions of opinion, such as the best hives. For a long time I was in favor of the vertical hive (high and narrow), which was almost the only hive used in Italy. When your regretted father, Charles Dadant, brought to our notice the modified form of the Langstroth with Quinby frames, we hesitated to adopt it. It was difficult to change large apiaries. In May, 1874, Charles Dadant was writing us: "Will the hive of my choice ever become popular in Italy? I cannot say, but I do know that those who try it will not regret it." He was right, the hive now known in Italy as the "Dadant hive" has proven its superiority over all others.

In January, 1888, I assumed the editorship of L'Apicoltore. Simplicity and economy have been my motto. I believe that two-thirds of the implements that are called indispensable are unnecssary in the management of bees.

In 1901, I published "The Bee and Its Culture," with an "Atlas" of bee-keeping, and both before and after I also published a Compedium of Bee-Keeping. On Dec. 31, 1912, after 25 years, I retired from the editorial chair.
Andrea Rauscher Von Stainberg und Rauschnfels. Noceto, Italy, May 31.

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Old-Time Advice to Bee-Keepers.—The following is an extract sent us by one of our readers, and copied from an old agricultural publication dated 1827. In those days, evidently, they had no conception of out-apiaries, nor even home-apiaries, nor of honey by the carload. They did not follow the motto, "Keep more better bees:"

TO MANAGE BEES ON MR. COBBETT'S PLAN.

The best hives are those made of clean, unbleached rye-straw. A swarm should always be put into a new hive, and the sticks should be new that are put into the hive for the bees to work on; for, if the hive be old, it is not so wholesome, and a thousand to one

No. 1.—Clipping Queens.

No. 2.—Catching the Queen as She Issues With the Swarm.

No. 3.—The Cage With Queen is Tied to a Branch.

that it contains the embryos of moths and other insects injurious to bees.

Over the hive itself there should be a cap of thatch, made also of clean rye-straw, and it should not only be new when first put on the hive, but a new one should be made to supply the place of the former one every three or four months; for, when the straw begins to get rotten, as it soon does, insects breed in it, its smell is bad, and its effect on the bees is dangerous.

The hives should be placed on a bench, the legs of which mice and rats cannot creep up. Tin around the legs is best. But even this will not keep down ants, which are mortal enemies of bees. To keep these away, if they infest the hive, take a green stick and twist it around in the shape of a ring, to lay on the ground, around the leg of the bench, and at a few inches from it, and cover this stick with tar. This will keep away the ants.

Besides the hive and its cap, there should be a sort of shed, with top, back, and ends, to give additional protection in winter; though, in summer, hives may be kept too hot, and in that case, the bees become sickly, and the produce light.

The situation of the hive is to face the southeast; or, at any rate, to be sheltered from the north and the west; from the north always, and from the west in winter. If it be a very dry season in summer, it contributes greatly to the success of the bees, to place clean water near their home, in a pan that they can conveniently drink from; for if they have to go a great way for water, they have not much time for work.

It is supposed that bees live only a year; at any rate, it is best never to keep the same stall or family over 2 years, except it be wanted to increase the number of hives. The swarm of this summer should always be taken in the autumn of the next year. It is whimsical to save the bees when the honey is taken. They must be fed; and, if saved, they will die of old age before the next fall; and though young ones will supply the place of the dead, this is nothing like a good swarm put up during the summer.

A good *stall* of bees; that is to say, the produce of one, is always worth about 2 bushels of good wheat; the cost is nothing to the laborer. He must be a stupid countryman indeed who cannot make a bee-hive; and a lazy one indeed if he will not if he can. In short, there is nothing but care demanded; and there are very few situations in the country, especially in the south of England, where a laboring man may not have half a dozen *stalls* of bees to take every year. The main things are to keep away insects, mice, and birds, and especially a little bird called the bee-bird; and to keep all clean and fresh as to the hives and coverings. Never put a swarm into an old hive. If wasps or hornets annoy you, follow them home in the daytime; and at night kill them by fire or by boiling water. Fowls should not go where bees are, for they eat them.

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Canadian Bee Journal Changes Hands.—We received a short time ago the

June number of the Canadian Horticulturist. This paper purchased recently the Canadian Bee Journal, which it has merged with the Horticulturist, making one paper under title of the Canadian Horticulturist and Bee-Keeper. This paper is the official organ of the Ontario Bee-Keepers' Association, and contains summary reports from the secretary, Mr. Morley Pettit. Its June number has several pages of articles and reports devoted to bee-keeping.

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The Token from the National Bee-Keepers to N. E. France.—Those who subscribed, in February, to the fund for a present to Mr. France, will be glad to hear that a leather arm-chair, with a sterling silver plate inscribed with dedicatory words, was purchased and sent to Platteville. As there was a larger sum than needed, the balance was sent to Mr. France, who now reports that he added enough to buy a similar chair for his faithful wife. He writes, under date of June 18:

"We feel proud of these presents, and hope to enjoy many comfortable evenings in them.

"Just now we are having a fine honey-flow from clover, with prospects of a continuation for some time. Basswood also is well budded. Wife and I wish Mr. and Mrs. Dadant pleasure and good health on their eastern journey."

BEE-KEEPING FOR WOMEN

Conducted by Miss Emma M. Wilson, Marengo, Ill.

Ventilation of Sections

The matter of temperature is one of importance for bees. In winter they must be kept warm, yet sometimes harm comes from their being too warm In spring and early summer there is little or no danger of having them too warm, for brood-rearing will be limited if the temperature surrounding the brood-combs be too low. On the whole, not so very much judgment is needed on the part of the bee-keeper in winter and spring. If he tries to keep his bees warm they will generally come out all right.

In summer, however, it is something of a problem to know just what to do in all cases about keeping bees warm. Wax working requires a high temperature; yet if one should keep a hive well closed and protected, so that little heat can escape during the honey harvest, one is doing just so much toward bringing on the swarming fever. Often, at least in some places, there are hot days and cool nights. In the night everything should be kept as warm as possible, but in daytime lots of ventilation should be given. But it would be too much of a chore to change the ventilation each morning and evening, and so a middle ground must be chosen, and just what that middle ground should be is a problem. The problem is easier when running for extracted honey. A colony producing extracted honey can have more ventilation given than one with a stack of sections upon it, since there is less comb building to be done in the former.

Producing section honey in T-supers, we have never done anything to keep supers or hives warm during the harvest, but we have done something to help the bees to keep cool. For years we have had a 2-inch space under bottom-bars, with a bottom-rack to keep the bees from building down. Some years ago we practiced allowing a ventilation space at the top of the hive, at the back end, by having the super shoved forward a fourth of an inch or so. Undoubtedly that had some effect in helping to keep down swarming, but the back row of sections was slower about being finished up than the rest of the super. To be sure we could, and did, reverse the super when partly filled, but that still left the central rows finished before the ends. So we gave up ventilating in that way, and allowed no ventilation except at the entrance.

After a while, however, Dr. Miller decided that the advantage gained by the ventilation in the way of preventing swarming overbalanced the disadvantage to the supers, and we returned to the ventilating. Within the past two or three years we were surprised to find that the back row of sections, in some cases, instead of being behind the others in being finished up, were finished before the front row. This year the same thing happened again, and then one day in June a sight met our eyes that we had not supposed possible. All the outer sections in a super were nicely finished up, back, front, and sides, while several sections in the center of the super were only partly sealed. We could not account for the freak. Were the bees of that colony loony? Then we found the same thing on another hive, and another, and another, until it seemed to be about as much the rule as the exception.

Can any one tell us why this sort of thing should take place? Was it because of the exceptionally hot weather? Anyway, it raises the question whether we ought not to give a good deal of ventilation to supers of sections, at least in very hot weather?

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An Optimistic View

An article by a woman writer in "Opportunity," is entitled "Half-Acre Opportunities for Women." After discussing the raising of poultry, pheasants, frogs, and squabs, the writer goes on to say:

"Bee raising is another profitable agricultural field that is open to the country woman. Honey sells for 25 cents per pound in most places, and a single swarm of bees will produce 70 pounds of honey in a season without feed and without attention. I have had considerable experience in this line myself, and know that big profits can be derived from it if it is given reasonable attention."

That certainly looks like a somewhat hopeful opportunity to the city woman penned up in a stuffy office, with a longing for the fresh air of the country. From the data given she could easily figure out something about the "big profits" mentioned if she only knew something about the number of colonies to be considered.

To the question, "How many 'swarms' of bees can be kept on half an acre?" she is likely to get the answer, "Oh, about a hundred." Then she figures. Seventy pounds of honey at 25 cents a pound amounts to $17.50. With 100 colonies one would have $1750. That, too, "without feed and without attention." All that is to be done is to get the 100 colonies of bees. Of course, no knowledge of bee-keeping is needed, for no attention is needed. No doubt with "reasonable attention" an annual income of $2000 or $2500 can be easily reached. There is no room for any doubt, for the writer of the article has "had considerable experience in this line," and so she knows.

Yet any woman with a little experience with bees knows that the prospect is painted in altogether too bright colors. Yet there was probably not the slightest intention to mislead. There is nothing remarkable about getting 70 pounds of honey from a colony; there are plenty of places where the consumer pays 25 cents a pound for honey, and plenty of locations which will support 100 colonies of bees. The trouble, as with many other half truths, is that the remaining half of the truth is not told. She should be told that the poor years and years of entire failure are all too many, that "without attention" her investment will take to itself wings in the shape of swarms, that winter losses will deplete her numbers, and that if she averages half the amount named, even *with* attention, she may consider herself quite a success.

Yet, even so, she may be greatly the gainer to join the ranks of bee-keepers.

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Honey vs. Poisonous Molasses

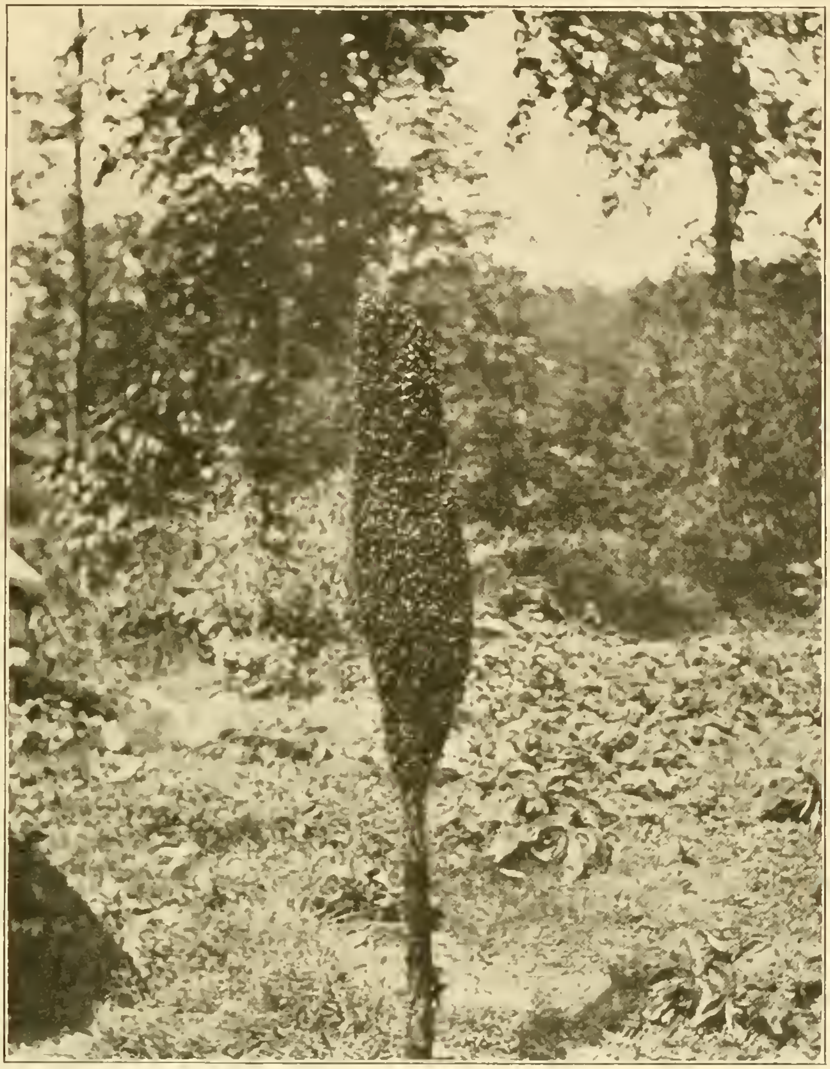
T. B. Terry, whose book, "How to Keep Well and Live Long," has had a wide circulation, and whose writings are eagerly read by thousands of readers of the Practical Farmer, in a late number of that periodical has the following with its striking heading:

BEEN DRINKING POISON.

"When I read in 'Starving America' that all Louisiana molasses contains sulphurous acid, I thought it must be a mistake. We had a gallon can of the best made, bought of a large firm that guarantees its food products pure. It had been used in roasted wheat to make our cereal 'coffee.' I got the can and looked at the label carefully, and, behold! there it was, in small letters that I had not noticed: 'Contains sulphur dioxide.' This is the same as sulphurous acid. I thought we were not eating any of the cursed poisons. We gave up evaporated peaches because they are bleached with sulphur; so are apricots, white raisins, etc. We will buy no more molasses, and no more candy, as pure candy cannot be made from poisoned molasses and sugar.

"What can we get in place of those that are sweet and pure? Well, we have 2 gallons of pure white honey, strictly guaranteed. We don't believe there is any sulphurous acid in that. We have maple syrup made by neighbors which is undoubtedly pure, and we buy the dark colored, unbleached raisins instead of the white bleached ones which are poisoned, and so on. Perhaps you think the little poison we would get from eating molasses, or candy, or dried peaches, etc., would not do any noticeable harm. It would not kill us directly it is not likely. But every little drop of poison must pull down on one some. When there are poisons in almost everything we eat, we cannot be at our best physically or mentally, cannot live out our full number of days."

If so keen an observer as Mr. Terry has been deceived into eating poisoned molasses, it is no wonder that thousands of others are deceived in like manner. His endorsement of honey as a wholesome substitute for the unwholesome molasses will do no small good, for T. B. Terry has been so slow to recognize honey at its true value as a conserver of health and strength. Let us hope that he will get into the light a little more fully, and inform his readers that it will be greatly for the health of the nation, and especially for the children of the nation, if, instead of the harmful quantities of sugar consumed, pure honey shall be used, since honey is directly assimilated, while excessive quantities of sugar make ruinous demands on the digestive organs in preparing it for assimilation.



No. 4.—The Settled Swarm.

Bee-Keeping In Dixie

Conducted by J. J. Wilder, Cordele, Ga

Some Questions Answered

"Mr. Wilder:—Do you think the Caucasian bees better than the Italians, and in what ways?"

Ans.—They are better for the South with the exception that they propolize more. That they are a superior race of bees has been tested by a number of our most progressive bee-keepers. If you do not think it would be safe to adopt this breed entirely, you might purchase a few queens and make a test for yourself, as we have done.

"How much and what kind of foundation do you use in supers?"

Ans.—Full sheets of thin surplus foundation.

"When do you put supers on?"

Ans.—I put one on for a starter just before each honey-flow, then add on more as the bees get ready for them, always inserting the empty super under the others.

"What kind of supers do you use?"

Ans.—I prefer shallow extracting supers for bulk comb honey, and their equivalent for honey in one-pound sections. If I were operating solely for extracted honey, I would use only full depth supers, same as for brood-chambers.

"How should I prepare my bees for winter?"

Ans.—No special preparation except to see that each colony has a good queen and a frame of honey on either side of the brood-nest.

"How can I keep combs from becoming infested with moth?"

Ans.—Place them in the care of the strongest colonies.

"How can I rear a few prolific queens?"

Ans.—Divide your best colony into two equal parts, and put one-half with the queen on a new stand. In nine days, in the other, you will have some nice ripe queen-cells, which you can carefully remove and place in cell-protectors. Look up and kill inferior queens and give their bees these cells.

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Introducing a Valuable Queen

"Mr. Wilder:—I have had an unfortunate experience in introducing a fine queen I recently received. I divided a very strong colony in two equal parts, and took the old queen, about half of the old bees, and most of the brood to a new stand. I tried to introduce the queen to the half left on the old stand, but soon noticed that these bees seemed to be demoralized, crawling out of the entrance all over the hive and flying out about the hive. This they kept up for three days, and then seemed to settle down. I then opened the hive, removed the cage and looked over the combs, but failed to find the queen. Looking on the ground in front of the hive I found her dead. Where was my mistake?"

Enid, Okla. E. M. Spaid.

Ans.—It was all right to divide the colony as you did, taking most of the brood to the new location, but you should have left the old queen with the bees at the old stand, and introduced the new queen to the other part. Almost all of the old bees would have left the new place and gone back to the old stand, and you would have had mostly young bees with the new queen. The young bees would have accepted the queen much more readily. This is a good way to introduce queens and make increase at the same time, if it is not done too late in the season. I followed this method for a long time with great success.

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Arkansas as a Bee-Country

"Mr. Wilder:—I am a young man and do not have the best of health. I love bee-keeping, and wish to make it my life occupation. Which would you advise me to produce, extracted or bulk comb honey? In what part of Arkansas would you advise me to locate? I lived a long while at Hot Springs, and had some experience with bees there." L. H. Hoover.

Jacksonville, Ill.

Ans.—If you produce bulk comb honey you will or should produce a certain amount of extracted.

The section of Arkansas which struck me as being most favorable for bee-keeping was Arkansas county, along Big and Little La Grue creeks, about where they run together. There are large swamps with plenty of honey-plants. The swamps along the west side extend out within one or two miles of Ball prairie, from which flow small streams one or two miles apart. Where the small streams enter the woodland, are beautiful points for homes. The prairie behind is for the most part of the year covered with flowers, many of which are nectar-bearing.

In this section bees have made the best record both in amount of increase and in surplus honey.

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Tupelo-Gum Honey

It is not generally known that our southern tupelo-gum honey has a high commercial value and a ready demand. In some sections of the South the production of this honey is the main industry, and yet hardly a drop is harvested compared to what goes ungathered. The bulk of this honey is produced in the extracted form, put up in 30 to 33 gallon barrels and shipped to the honey dealers in the North. They have agents in the field to buy it as soon as it is produced. They prefer this honey because it will not granulate, and are willing to pay a fancy price for it. It has an exquisite flavor, a thick body, and is very light in color with just a little lemon hue, which makes it appear very beautiful in glass containers. Perhaps no honey has a higher commercial value for these reasons.

There are three species of this gum, and very often two are found growing together. The white specie produces the honey I have referred to above, and grows mostly on low swampy land, along the interior water courses. The black tupelo grows in the same sections, but on the low muck land. Its honey has nearly the same flavor as the white, and has a heavy body, but is much darker in color.

The other species I call the scrub tupelo. It grows along our smaller creeks and around ponds. Its honey has about the same body and flavor as the white, but has a green hue. Our Dixie bee-keepers who are spreading out their bee-business, should not lose sight of this honey-plant. They should place some bees in reach of it, even if they have to go 100 or 150 miles to do so.

No. 5.—The Queen is Let Out to Run in With a Swarm.

No. 6.—The Proof of the Pudding

SKETCHES OF BEEDOMITES

Death of Wm. McEvoy

It is with the deepest regret that we announce the death of one of the pioneers in the treatment of diseases of bees, Mr. Wm. McEvoy, of Woodburn, Ontario, Canada, which occurred at his home June 29, 1913. Mr. McEvoy was born at Zimmerman's Mills, Ont., March 26, 1844. While a young man he worked on the farm, and at the age of 18 secured his first bees. For two or three years after this he was fireman in a grist mill, but soon gave this up to spend his entire time in bee-keeping, which occupation he pursued until his death.

The Late Wm. McEvoy

As a foul-brood inspector and authority on foul brood Mr. McEvoy is especially well known. His method of treatment of American foul brood is known by all bee-keepers who have had to deal with this dreaded disease. It stands as an unfailing treatment for the disease if practiced exactly to the letter, as laid down by its originator.

Mr. McEvoy, besides being an experienced and practical man in bee-keeping, and in the controlling of bee-diseases, was also an able writer. As early as 1890, we find him writing on American foul brood in the American Bee Journal. By that time, too, he had formed an opinion as to the causes of foul brood, and also the treatment by which it could be eradicated. There was no middle course with him in the treatment of this disease. His plan was to be thorough. Briefly stated, the plan consists in shaking the bees from their old combs on strips of foundation. These strips are left in the hive for four days, by the end of which time all the honey carried from the diseased combs has been consumed. The bees are then put on full sheets of foundation and given a fresh start.

For many years Mr. McEvoy was foul brood inspector, and to him is due a great deal of the early advancement in bee-keeping in Ontario.

Always a large bee-keeper, he was firm in his convictions that a living could be made from this pursuit alone. Almost his last words to his son Ewart were, "Stay with the bees."

We have lost a great man and a great bee-keeper, but his name is written down on our pages where it will remain indellible. All sympathy to the bereaved family in their loss.

CANADIAN BEEDOM

Conducted by J. L. Byer, Mt. Joy, Ontario.

Crop Conditions

At this date, July 10, the clover honey harvest is just closing in Ontario. Very few reports are in, but those I have received seem to indicate a short crop for the eastern part of Ontario, with a full yield in central counties along the lakes. In our own yards the yield is from light to very good. At the north yard, 90 miles from home, the late, hard frosts damaged the clover badly, and the yield is light. No prospects from basswood, as up there the frost hurt the buds, and then a plague of caterpillars stripped all foliage from the trees.

At the yards near my home the yield has been excellent; in fact, the best I ever had, and the quality is of the very best. What few basswoods we have here look promising, but we rarely get much from that source. Prospects were never better for buckwheat, so all things considered, it looks like the year "'13" will be a good one for most Ontario bee-keepers.

Moving Bees

Mention was also made of my intention to move a large apiary over 250 miles. The lot comprising two carloads, including supplies, etc., were all moved safely without a hitch. I intended to send a picture of the large apiary taken the day after the bees were put on the stands. Although I have the negative developed, I have not had time to do any printing, so I will send the picture for next issue if all goes well.

The Crop—Different Races of Bees

Although we have secured a nice crop, we have had practically no swarming with the exception of one yard, where the bees got ahead of us and went crazy for a few days. Many have reported heavy swarming with only one yard to look after, and I have wondered how they would like to tackle a 5-yard proposition, with no help except in extracting time. Abundance of room *in time* is one of the main factors in preventing swarming, but sometimes nothing will stop an outbreak. Fortunately for us the bees were easily controlled this year, for with all the other work, I hardly know what might have happened if all the yards had acted like that one did. I have mostly Carniolan blood in my yards, but as I use big hives, the swarming is not usually a serious factor.

I do not like to tier up too high, as I believe more honey will be secured by extracting often and using but two full depth supers to a hive. This year I had to do the best I could, and at present I have many colonies with 4 full depth Quinby supers—10 frames in a super, and all full of sealed honey. Some work ahead of us yet before we can fold our arms and "go fishing."

While, as I have said, Carniolan blood predominates in our apiaries, yet we have some Italian as well, both golden and leather colored. It is interesting to note the traits of the different races in the same yards. This season I have been taking note of some of these characteristics.

In the great rush of work I simply extracted from the top stories to give immediate relief, and these empty bodies were placed back on top again. Not good practice I know, and I never did it before, but there is a time when you are apt to get so tired as to say, "What does it matter anyway," and do things contrary to what you know to be best. In fact, I had no time to place empty supers on the bottom, and with the rush of nectar coming in, the bees went any place they had a chance to. I believe they would have stored it in a pail if one had been placed on top.

We are now having very cool weather, and these top stories recently emptied are interesting to look at. With the dark bees the super is overflowing with bees, but with the Italians hardly a bee is seen above, even if the colonies are clustering outside the entrance. Carniolans, like the black bees, are far more free to store honey a long ways from the brood-nest than are the Italians; and while this fact was not so apparent in hot weather, it is plainly evident in cooler weather.

This is a well known fact, but I never noticed it so prominently before. During the heavy flow the black bees that we still have mixed in some of our yards, stored equally as well as the Carniolans and Italians, but as the flow slackened, they were "not in it." In other words, they have not the "sticktoitiveness" that the other two races have. As to the general average of the yards, the Carniolans stored far the most honey—not that they worked better than the Italians, but the flow came early, and the Carniolans were boiling over with bees, simply waiting for the nectar to come, while many Italians were still a bit weak in field force.

As to cellar and outdoor wintering, this year by all odds favored the outdoor system. The large yard moved from the east was wintered in caves, and while the bees appeared to be in perfect condition, they did not measure up with the 100 colonies wintered outside. The outdoor bees doubled on the others; for awhile there appeared to be about the same number of bees in all the hives, but on May 24 to June 10 it was a different story. Many of the bees in the cellar-wintered colonies were *old* on May 24, when comparison was made, and during the long spell of cold weather after that period until clover bloom, these old bees dropped off a good deal faster than young ones could take their places. Another year might tell a different story, but this year it would have meant a few thousand pounds more honey had all been wintered outdoors. All our bees in the York county apiaries were wintered outside, and because they were boiling over when the clover flow came, we had a nice yield from that yard.

Mention was made about one yard swarming badly for a few days, and while this was caused by the bees getting crowded for room, after all it did not turn out so badly. I scented trouble at the yard the day before the outbreak, and as I had to be extracting at other yards, I hired a man fairly familiar with bees to cage the queens and let the swarms return. Yesterday, about 10 days after the fever came on, I managed to get a day off, and went to this yard to straighten up the tangle. Imagine my surprise and delight when, after lifting off the supers, I found in most cases the cells were cut down and a young queen in the hive, even if the old queens had been caged on top of the supers all the time. In some cases the swarming had been caused by supersedure, but in others young queens of last year's rearing were in the cages. Hard to explain why it was done; but my theory is that during an exceptionally cool spell of weather, which lasted for 48 hours just previous to my visit to the yard, the bees had allowed the first issuing young queen to destroy all the other cells.

As already stated, only the one yard gave us any trouble, and while I expected to lose swarms, I am surprised and gratified the loss was so small. I have just returned from one apiary not visited for a week, and although the flow has been good there, not a swarm has issued; that yard is mostly composed of Carniolans that are accused of being such bad swarmers.

I do not feel like reading or writing much just at present. If you wonder why, take charge of five apiaries during a good honey-flow. After "following the game" for four weeks without a let up, you will understand all about it. *Good night.*

SOUTHERN BEEDOM

Conducted by LOUIS H. SCHOLL, New Braunfels, Tex.

To Guard Against Foul Brood

It is of the utmost importance to be constantly on the watch for bee-diseases, especially foul brood, and all proper precautions should be taken beforehand. Foremost is educating one's self properly on this subject, as it is highly important to know everything possible about diseases of bees, so that the apiarist may be prepared. Taking the proper steps at the right time, before the "enemy" appears, is a strong fortification against any depredations. "An ounce of prevention is worth a pound of cure."

A NEW PLAN FOR PROTECTION.

At a meeting of several enthusiastic and progressive bee-keepers recently, the discussions centered about a plan of protection, which, if carried out properly, may be of untold benefit. I am a strict advocate of doing things *at just the right time.*

Texas has now in operation, since July 1, a stronger and more powerful foul brood law than the old one. With it I believe the diseases of bees can be kept in check, if not eradicated from the State altogether. It is up to the bee-keepers of Texas. Organized effort on their part, and co-operation with the State foul brood inspector at all times, will mean a greater work along this line than can ever be expected in any other way. It is this that I hope to see carried out promptly and properly. We have a foul brood law that I believe is powerful enough to back any cases that may necessarily require such "backing up."

ARMED WITH A CERTIFICATE.

The plan discussed above calls for the inspection of our own apiaries, and obtaining a certificate of freedom from contagious bee-diseases among our own bees, first of all. This can be obtained easily enough in such localities that are near or in proximity to those infected. Such an inspection would be worth a great deal to determine definitely whether one's own apiaries are actually free from disease. The satisfaction of this knowledge should be appreciated by the careful bee-keeper.

Holding a certificate from the State inspector ourselves, which shows that our bees have been inspected and found in good healthy condition, we are well prepared to come forward and require the inspection of all other bees near us. It should be our intention to enforce such inspection upon all other bee-keepers in our neighborhood after we have secured our own certificate.

"IN UNION THERE IS STRENGTH."

To make this more effective, a number of bee-keepers should unite. This will strengthen the plan materially, as united effort will carry greater weight than a single-handed attempt. But by all means let it not be understood that any one should not take the matter up just as promptly single-handed, and especially where a progressive bee-keeper finds himself in a somewhat isolated locality. The time has passed when we should hesitate to carry out the proper steps for protection for fear of *offending our neighbor bee-keeper.* To protect ourselves is a business proposition.

THE DISEASE MAY ALREADY BE NEAR.

The question of the distance foul brood may be from one's locality will play a part in this method of procedure. Yet it is not necessary to wait until the disease appears. That would never do, and that is exactly what we want to guard against. Take for instance in my own locality, I find that foul brood exists about a dozen miles from one of my apiaries. The question comes up then, whether there may not be scattering foul brood cases nearer. Thirty miles should be considered near enough, in my estimation, to warrant taking steps to guard promptly against the disease. Who can know whether some infection from that foul brood apiary, even at an apparently safe distance, may not be carried near enough to my own apiaries to be a source of infection. Especially important is this when the diseased apiary is owned by a careless bee-keeper.

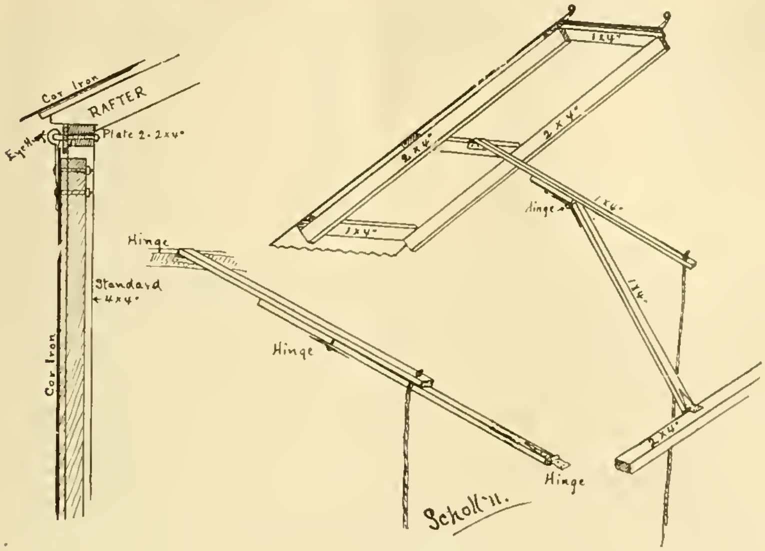
It behooves us to take up this matter at the very earliest stage. It is hoped, therefore, that the bee-keepers of Texas, and other States and countries as well, will make one great fight against those menaces to the bee-keeping industry.

◆

Scholl's Honey-House Shutters

A request from an enquirer, desiring information about my shutters with folding "arms" or supports, as used on our honey houses, prompts me to give a drawing that is self-explanatory. Our shutters are 8 feet long and 6 feet wide, and made of 2x4 and 1x4 lumber and corrugated galvanized iron. On account of their weight it is necessary to devise some means for opening and holding them from the building. This allows proper ventilation, and at the same time serves as additional roof for shade. A cooler building is the result.

Our honey houses and work shops are provided with these large shutters on the south side. By this means it is possible to open the greater part of the



Scholl's Honey-House Shutter.

wall with great ease. Just a little push of the hand throws the shutter forward and outward, and a pull of the rope raises it to the proper position. To release the "arm" and close the shutter, a slight push on the underside of the folding arm suffices. It is important to hold to the rope firmly so as to prevent the shutter from slamming, and possibly striking the person operating it.

A slight change from attaching the shutter support, as shown in the drawing, is necessary to make it work more perfectly. Instead of hinging the support to the crosspiece across the middle of the shutter, an independent crosspiece should be placed one-fourth the distance from the lower end. On an 8-foot shutter this crosspiece would be 2 feet from the lower end. The two pieces of the support are each 4 feet long, the lower one hinged to the middle of the upper one with the rope.

CONVENTION PROCEEDINGS

New Jersey Bee-Keepers' Meeting

One of the best attended summer meetings of the New Jersey Bee-Keepers' Association was held at the apiary of Geo. Grover, near Trenton, on June 25. People were in attendance from New Jersey, Pennsylvania, New York and Delaware—64 in all being present. As an evidence of the interest, one couple rode their bicycles 13 miles to the railroad station, in order to catch an early train.

The improved robber cloth was the subject of the first talk, by Dr. Cheney, of Hoboken. He also showed an ingenious stand to be used when manipulating hives.

The tube bee-escape and its uses were ably discussed by W. W. Case, of Frenchtown. While the primary object in devising this was for the control of foul brood, it is also ideal for transferring.

After lunch, "Short cuts in finding queens," was discussed by I. J. Stringham, of New York; Dr. Cheney, of Hoboken; and C. H. Root, of Red Bank. Mr. Stringham's plan is primarily intended to be used on black or hybrid stock, and at a time when robbers are troublesome. He puts near the hive to be manipulated, a spare bottom-board, on that a queen-excluder, and two empty hive-bodies on this. The hive in which the queen is to be found is gently smoked at the entrance, lifted from its bottom-board and placed on top of the two empty bodies. The cover is now removed, the bees freely smoked, and two combs removed from the sides of the hive. If the queen is not on them, they are covered from robbers. The remainder of the frames in the hive are spread, and the bees drawn down by free use of smoke.

This will cause most of the bees and the queen to cluster below the bottom-bars. The hive is raised about an inch and set down sharply, dislodging the cluster below the frames, then replaced on its stand, and the two frames returned. The queen will be found trying to pass through the excluder.

Dr. Cheney's plan is to remove the hive from its stand and place an empty hive in its stead. On this place a queen-excluder with a 4-inch board tacked on one side of the lower side, so there is a space of the lower hive left uncovered. The hive to be manipulated is then placed on the queen-excluder, gently smoked, and the combs transferred from the upper to the lower hive through the uncovered part of the lower hive, search being made on each comb for the queen.

Mr. Root said all who enjoyed this kind of sport were welcome to it, but his way was to keep nothing but quiet Italian stock, and he never had the least trouble in locating the queen by "just looking."

The last discussion was by President Root, on his winter-case. This is a double-walled outer case, with 2 inches of packing between the walls. It telescopes over the regular hive-body, the hand-hole cleats being left off to insure a closer fit. The regular hive cover is also left off, and ½-inch super cover is used over the body. With this there is used a double packed bottom and a packed telescope cover.

Mr. Root claims this case is worth $2 per hive each year in the saving of winter stores and extra honey gathered early before the cases are removed. So far as location is concerned, Mr. Root's yards would not be considered by apiarists to be in need of extra winter protection, as all are in fairly well sheltered locations, and not very remote from Raritan Bay and the Atlantic Ocean, where temperatures are not, ordinarily, extreme.—E. G. Carr.

The Massachusetts Convention

The annual convention of bee-keepers, held by the Extension Service of the Massachusetts Agricultural College, June 11 and 12, at Amherst, was characterized by a large attendance and a particularly interesting program.

The equipment for apiculture at the State College, which is as good as any in the country, has been added to during the past year, the manufacturers sending exhibits exceeding last year's display.

The morning of the first day's session was given over to general displays and demonstrations by inventors and manufacturers, and three addresses. Mr. E. C. Britton, of Canton, Mass., discussed "Practical Bee-Keeping," emphasizing especially the need of a large number of working bees for honey production; Mr. Morley Pettit, Provincial Apiarist for Ontario, Canada, took up "Extracted Honey Production;" and Prof. F. A. Waugh, a horticulturist of National reputation, spoke on "Pollenation of Fruits."

Wednesday afternoon was given over to bee-diseases. Diseases in the apiary and their transmission, prevention and

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The Massachusetts Convention Group.

Partial View of Exhibits at Amherst.

eradication are being carefully dealt with by the department at Amherst, and the discussions were comprehensive. Dr. B. N. Gates, State Apiary Inspector, gave a general survey of brood diseases. Mr. Chas. M. Musgrove discussed the "Bee-Escape Treatment for Foul Brood," and the question was open for general discussion by the attending bee-keepers.

Bees and queens shipped by dealers from all parts of the country in combless packages were on exhibition, and were manipulated. Dr. Gates believes that one of the best methods for the prevention of transmission of brood diseases in shipping bees, is in using the combless packages, and he is at present instigating a campaign for their universal use as far as possible. The Massachusetts deputy inspectors gave a demonstration of treatment for diseases.

Of special interest was an illustrated lecture Wednesday evening by Mr. Pettit, concerning bee-keeping in his Province. Conditions in Ontario are much different from those in New England, and the large scale production of Ontario bee-keepers and their methods of obtaining extracted honey were of much interest to those in attendance.

The second day opened with a discussion of bee foods, principally candies, by Mr. O. F. Fuller, of Blackstone. Geo. T. Whittlen, of the Hartford School of Horticulture, demonstrated some original methods of winter increase, and a scheme of working ing 2 colonies of bees on one super.

At the model apiary, Mr. E. R. Root, of Medina, Ohio, demonstrated and explained appliances for the uncapping and extracting of honey on a commercial scale. A 6-frame electrically driven reversible extractor, a steam capping melter and a hot uncapping knife were in operation, together with a honey-pump, which discharged the extracted honey into the bottling device.

Mr. Root also spoke extensively on the "Management of Out-Apiaries," and was followed by A. W. Yates, one of the Connecticut Deputy Inspectors, speaking on the same subject for New England conditions. A discussion by Mr. John Shaughnessy, a Deputy Inspector of Lee, and a lecture by Dr. W. P. Brooks, on "Increasing the Clovers," closed the program.

The regular display of bee-appliances of all kinds by the college was much larger than in former years, there being several additions of historical interests as well as many new inventions. A fine display of wax in all sizes of preparation and refinement, together with a comparative exhibit of wax on the market, attracted much attention. The college has recently installed a model steam plant for wax rendering and refining, and the exhibit of about 100 pounds of refined produce was prepared under Dr. Gates directions. The crude way in which much wax is commercially handled, was well brought out by the superior product obtained by careful methods.

A collection of honey packages, including tin section boxes from Colorado, new shipping crates and other packages were shown. Also cement hive stands of various styles, a new observatory hive, and a new patented bottom-board claimed attention. The apiary of 50 colonies is surrounded, this year, by a bee-garden of all the important nectar-yielding plants of the country around Amherst, and this feature served an educational value.

The keynotes of the convention were the necessity of applying strict business methods in marketing bee-products, and the value of keeping up with the advance in disease treatment. Conditions are yet favorable for a good honey crop in Massachusetts.

FAR WESTERN BEE-KEEPING

Conducted by WESLEY FOSTER, Boulder, Colo.

An Ideal Farm and Apiary in Colorado

Mr. Danielson lives on a beautiful irrigated stock farm 3½ miles northwest of Brush, Colo. Brush is in the South Platte valley, about 100 miles northeast of Denver. The land here is adapted to alfalfa, sugar beets, and grain. The lay of the land could not be finer for irrigation purposes. The

APIARY OF DANIEL DANIELSON, AT BRUSH, COLO., SURROUNDED BY HONEY-LOCUST HEDGE

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slope is just right. Land values are from $100 an acre up to $175. One farmer raised 37 tons of beets to the acre, last year. The wide sandy bed of the Platte is nearly dry most of the year, and sweet clover has taken most of the bottom land. All the bee-men locate within range of this sweet clover. Alfalfa, of course, is an important source of nectar, but the sweet clover is necessary to help out. Not many farmers have bees, as they were put out of business by the poor seasons several years ago.

Mr. Danielson said they always got some honey when the grasshoppers did not take everything. He operates about 350 colonies, and his grown sons operate the farm. In the feed lot are 25 head of fine fat steers ready for the market. They are worth about $100 each. I wonder that a man can afford to keep bees who can raise such stock as that.

Mr. Danielson is getting along in years, and is troubled somewhat with rheumatism, so that he finds bee-keeping well adapted to his abilities. His crop last year was 15,000 pounds of extracted honey from about 200 colonies. He has sold practically all his honey for 10 cents a pound. He has an International motor wagon and trailer, and can load 1600 pounds in the box and 1000 pounds in the trailer. The International seems to be quite a favorite. I know of five other bee-men in Colorado who have purchased Internationals.

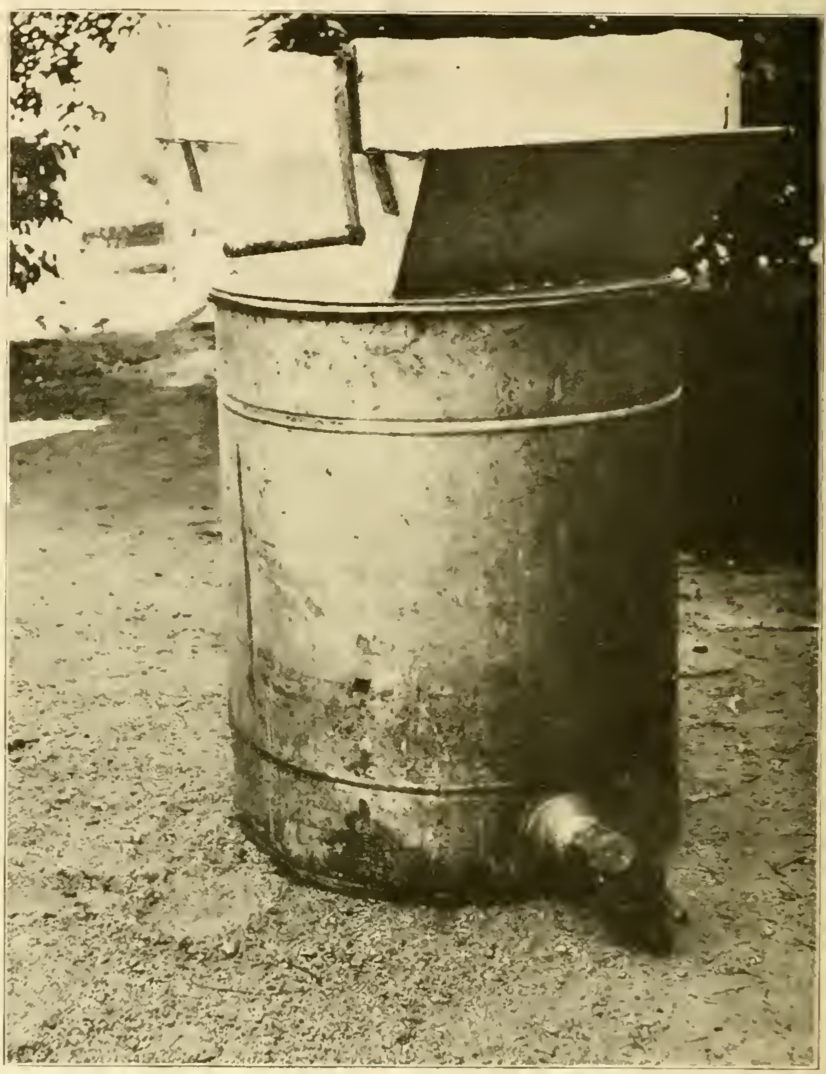
A visit to Mr. Danielson's home apiary is worth while. Surrounded on all sides by a honey-locust hedge, it is wonderfully well protected from the winter storms. The honey house is close by, and is tight and warm so winter work can be comfortably done by an elderly person as is Mr. Danielson.

A track set on two by fours runs the full length of the apiary; one row of hives on each side of the track. The flat push car, shown in the illustration, will hold all the honey the automobile can haul out. Showing the precision with which Mr. Danielson works, it should be mentioned that the track is level from one end to the other.

Mr. Danielson has an extracting house about 200 yards from his apiary, close to the house, and here I found an 8-frame extractor ready to be hooked up to the gasoline engine.

The novel thing about the place that appealed to me was the honey strainer (shown in the illustration). Cheesecloth is rolled up on rollers, and with the crank it can be turned, and a clean surface had for straining without touching the fingers to the strainer. This strainer is taken off each night and washed. A screen wire bottom is used for the cheese-cloth to lie upon when the honey is straining. Hooks are placed along each side to fasten the edges so that the honey will not run over. The honey runs through a pipe that passes through the capping melter before flowing into the strainer, so that the honey is heated before it goes into the strainer.

Foul brood has not made its advances in Morgan county very much so far, but care will have to be exercised to keep it out, as some has been brought into the lower part of the county. In case it should gain a foothold, it is possible that Mr. Danielson will find it necessary to give up extracted honey for comb-honey production.



Cheesecloth Roller Strainer of Daniel Danielson.

CONTRIBUTED ARTICLES

The Flight of Bees

BY G. W. PERRY.

HAVING noticed of late, in the Bee Journal, this subject, "Do Bees Fly in a Straight Line?" and having hunted them a little some years ago, I feel constrained to "butt in." My first observation was accidental. I was not caring whether they flew straight or not, but their performance was so striking that I was forced to take notice. I picked up a line of bees that flew southwest. I followed them, bee-hunter style, about one-half mile, when all at once they

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Apiary House of G. W. Perry.

flew northwest. I followed them in the same manner about one third of a mile into the attic of a farm house, on the bank of the Farmington River. They were flying around the end of a mountain rather than over it, and out of a straight line at least one-third of a mile.

Another time I started some bees on the east side of a high, steep rocky bluff. They flew north about 200 rods, then turned to the left about 20 degrees to where the bluff was not half so high. Here they made another turn to the left down through an open pasture into some hives in a man's backyard.

Bees, in crossing from one mountain to another, will go down into the valley to cross, I believe, on account of the wind they encounter so high up. My obervations lead me to think that bees do not like to get too far from earth. Bees foraging at one end of a valley with their home at the other, if the valley is narrow with mountains on either side, will keep in line with the valley, however crooked. Do bees fly in a straight line? In a level, open country, on a still day, they fly practically straight, but we need to give the *practically* a good wide margin.

I will say in conclusion to those who believe bees fly in a straight line only, that the test of the pudding is in the eating, and if they will equip themselves with a bee hunter's box, a field glass, a pocket compass, and "hike" for a country that is all chopped up with mountains, hills, valleys, rivers, brooks and timber, and hunt bees, they will get a lot of pleasure, some surprises, some knowledge, no boodle, and they may change their mind. For the love of our little friends, should you find their home in some tree, before you rob them, unless you can give them another home, step to one side and talk to yourself. If you are a lover of Nature, and of the music of the millions of voices that sing the praise of that Deity, you will have an outing that is hard to beat, and have a better knowledge of the flight of bees than you will get in a long time by going into a level open lot and sitting on the fence to hear and see a few bees fly past.

Litchfield, Conn.

Some Things About Cellar-Wintering

BY DR. C. C. MILLER.

FROM a source not lightly to be refused comes a request that I should tell all I know about cellar-wintering. The task might not be a very heavy one if I should confine myself strictly to what I really know. Josh Billings says: "What's the use of knowin' so much, when so much that we know ain't so?" And too often some of the things we think we know we afterward find "ain't so." There are things I thought I knew a few years ago that I don't feel so sure about now.

CHOOSING BETWEEN OUTDOOR WINTERING AND CELLARING.

One of the first things to decide about wintering is whether it is better to winter in cellar or outdoors. One might think a degree of latitude should be found, north of which all bees should be cellared, and south of which all should be wintered outdoors. But it doesn't work out very clearly in that way. Isothermal lines are not entirely coincident with parallels of latitude. Indeed it is not certain that isothermal lines, or lines running through points of equal temperature, can be at all depended upon.

I am located in northern Illinois, in latitude 42 degrees, and I am pretty sure that the cellar is better for my bees than outdoors. But it does not necessarily follow that a man a hundred miles directly north of me should winter his bees in a cellar. I am located where winter winds are fierce, and where they keep steadily on their job, hours and hours at a time. And that "hours and hours" is a matter of more consequence than the fierceness of the wind. The man 100 miles north of me may have a much lower temperature, but not afflicted with such winds, and his bees may be all right outdoors.

Up to 40 degrees of latitude it is safe to say that outdoor wintering is the better way, but when we get north of that a little ways it begins to be a question. The beginner may do well to rely on the experience of older beekeepers. For myself, if the thing were at all in the balance, I would lean strongly toward outdoor wintering. If there were no other reason, a strong one is that one with an ordinary cellar cannot go from home for a great many days while his bees are in a cellar. I may not actually enter the bee-room for days, or even weeks, at a time, but I must be on hand to open or shut doors when there are material changes in the weather. So I envy the man who can leave his bees outside.

TIME TO CELLAR BEES.

Just when is the right time to put bees in cellar is largely a matter of guessing. If one could know all about the weather a few weeks in advance, it would be an easy thing to lay down a reliable rule. It can be given in a few words: *Cellar your bees the day after they take their last flight before winter.* The guessing comes when you try to decide whether the bees will have another day when they can fly. I have known it to happen that a good flight-day came rather early in November, and then no chance for another flight until the following spring. Suppose bees have a flight Nov. 20, and you cellar them the next day. Then Nov. 30 comes another flight-day. You have subjected your bees to 10 days' unnecessary confinement. That's bad. Then suppose the next year the bees fly again Nov. 20. Remembering your experience of the previous year, you wait for them to fly 10 days later.

But when Nov. 30 comes, the thermometer is fooling around the neighborhood of zero, and you take your bees in without waiting longer. The confinement to the hive begins just the same in the 2 years, only in the first case the first 10 days were spent in the cellar, and in the second case outdoors. In that 10 days outdoors the bees will load their intestines very much more than they would in the cellar. In other words, leaving the bees out 10 days too long will do more harm than taking them in 10 days too soon.

The chances are, however, that if you wait until Nov. 30, and no flight comes then, you will keep waiting and waiting for a warm day, and if no such day comes you will finally take in the bees after they have been out many days too

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long. In my locality there is not much danger of being caught before the middle of December; but I never care to take chances after Nov. 15, and the first flight they get after that, in they go. If a warm day comes soon after they are in cellar, it doesn't worry me. I had rather be caught that way than the other way.

Another View of the Exhibits at Amherst.-- See page 267.

TEMPERATURE OF CELLAR.

The first difficulty met in attempting to have a bee-cellar of right temperature lies in the thermometers. Examine a lot of ordinary thermometers for sale in a store, and you will find them varying through quite a number of degrees. Not all can be right. Not long ago Dr. Phillips came along with a thermometer of realiability, and I found upon comparison that the thermometer in my cellar registered 5 or 6 degrees too high. It was a rickety old affair whose health had not been improved by a fall which had displaced the glass tube. I adjusted the tube to agree with his, and was glad to find that two other thermometers were all right.

We are told that somewhere about 50 degrees in the middle of the cluster is the point at which bees are most nearly dormant, and that 45 degrees is the favorable temperature for the surrounding air. So with a reliable thermometer, the beginner may think he has no difficult problem. But he will find difficulties. If he does not know for certain whether his thermometer is reliable, then a safe advice is: "Find out at what point the bees are most quiet in *your* cellar by *your* thermometer, and then try to keep your cellar at that temperature." Safe advice to give, but not so easy to follow.

In the first place it is not so easy as might be imagined to decide when bees are most quiet. There is no way of measuring the degree of quietness. Stand in the bee-room today and listen to the murmur of the bees. Then stand in the same place tomorrow and listen. You can hear the murmur all right, but can you remember the noise of the previous 24 hours clearly enough to say whether it was greater or less, unless the difference be very great? Another trouble, especially in a very windy country, comes from the noise made by the wind outdoors. It does not take much of a wind outdoors to drown out quite a murmur in the cellar. So it is hard to know whether the noise you hear is made by the bees or the outdoor wind.

Another trouble is that the temperature is not the same in all parts of the room. It is considerably colder at the floor than at the top of the room.

One might think that the ideal would be to have the bees in a cellar so quiet that one could never hear a sound from them. I never had that experience. There is always at least a low murmur like the sound of a gentle breeze among pine trees. Latterly I am inclined to the opinion that a continued silence, with 50 or more colonies in a cellar, is not only unattainable but undesirable.

An account of some observations may not be without interest. Last winter there were in my cellar 93 colonies piled 4 high. As the difference of temperature between the bottom and the top hives amounts to several degrees, I thought I could make some comparison that would be helpful. March 28, at noon, the cellar door having been open all forenoon, the temperature at the bottom of a pile near the center of the room was 43 degrees, and on top of the pile 48. (That 5 degrees difference was a little more than the difference between the two hives, as the upper thermometer was on the *top* of the upper hive, and the lower thermometer should have been on the top of the lower hive. But that was not convenient.) I might classify the colonies into 4 kinds: Those that were entirely silent, from which I could hear no sound until I had blown in the entrance; second, those from which I could hear a low murmur by listening carefully; third, those whose murmur could be plainly heard; and fourth, those that might be called noisy. Here is the result:

Bottom hives: 3 silent; 9 low; 9 murmur; 2 noisy.

Top hives: 4 silent; 9 low; 9 murmur; 1 noisy.

So far as that showed anything, it showed there was not much difference between the upper tier and the lower, which implies that the best point of temperature would be somewhere between 43 and 48, possibly the traditional 45 degrees.

I then closed the door so as to allow the cellar to become warmer. At 6:30 p.m. it was 46 degrees at the bottom of the pile and 53 at the top. It seems a bit strange that there should be a difference of 7 degrees between bottom and top in the evening, and only 5 degrees at noon. My readings may not have been made with utmost accuracy; certainly they were not made with the greatest exactness. At any rate, here was the result:

Bottom hives: 2 silent; 12 low; 6 murmur; 3 noisy.

Top hives: 0 silent; 6 low; 11 murmur; 6 noisy.

That seems to indicate that bees are more quiet at 46 degrees than at 53, and leaves it still possible that the traditional 45 degrees is all right. But I don't count that there is anything so very reliable in these observations, so far as they go. My ear is sufficiently musical so that I can measure relative pitch; but I haven't much confidence in my ability to measure relative volume.

A factor should be mentioned that may make a difference. Years ago we were told that at intervals bees had spells of waking up, and shifting their position so as to be nearer the source of supplies. Without making any special observations regarding the matter, I had become skeptical about it, and inclined to believe it one of those traditions that pass current in beedom because no one has taken the pains to dispute them.

But I am not so sure about it. In the observations at noon, just mentioned, there were 2 noisy colonies. It so happened that I remembered where they were, and in the evening there were no noisy ones in the vicinity. There were, however, 3 noisy ones in the lower tier in the evening, 3 that had not been noisy at noon. Moreover, while the lower tier was in general more quiet than at noon, there were more noisy ones in it in the evening than at noon, and no colony was noisy both noon and evening. Some one may say, "But didn't you stir up the bees so as to make them noisy?" I don't think so. I simply moved quietly from one hive to another, holding my

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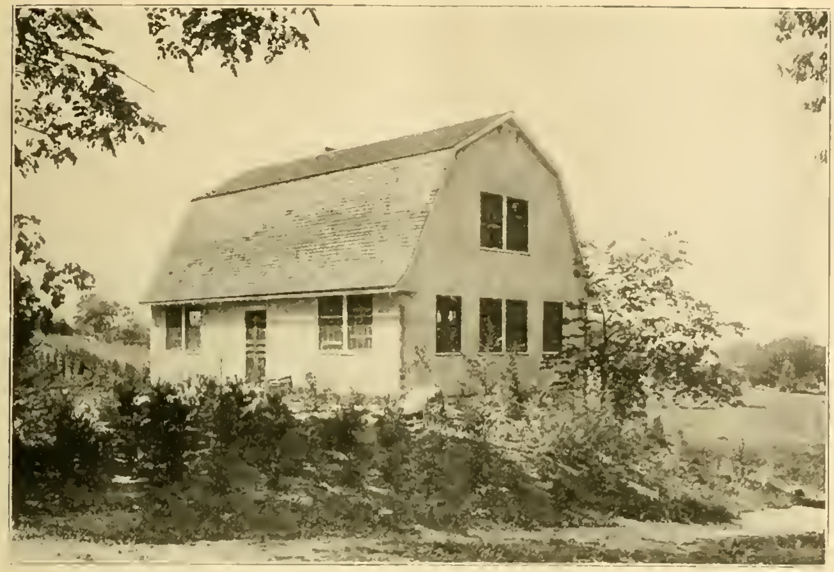
American Bee Journal



The Apiary Building at the College at Amherst, Mass.—(See page 267.

ear to the entrance, and I don't believe the bees were disturbed by it at all. If my listening made them noisy, there should have been more noisy ones than those few. Still, I am not sure. Sometimes a colony is stirred up by the mere odor, perhaps, from my head.

So it looks true that colonies have noisy spells without anything being wrong, and if that be the case, it follows that with 50 or 100 colonies in a cellar there might never be a time of entire silence in the room, although some colonies might be silent at most times. That explains my saying that a continued silence may be undesirable if the periodical waking up is a normal performance.

With a difference of 5 to 7 degrees between the top and bottom of a pile, it is impossible to have all the bees in a room at the same temperature. The nearest to having all at the best temperature, supposing 45 degrees to be the point, is to keep the thermometer hanging just inside the door that enters the bee-room from the furnace-room, some 5 feet from the ground, as I find at that point the temperature will usually be about the same as at the middle of a pile in the center of the room.

Like enough bees will stand no small variation of temperature without any great harm—possibly from 30 to 50 degrees—provided other conditions are all right. All the same, the nearer they can be kept to the degree of greatest quietude the longer they can stand confinement.

It occurred to me that by taking a single colony and noting its behavior, I might do better than to give my attention to a number. If I could begin at or below the point of greatest quietude, and then raise the temperature of the cellar, listening to the bees at the various degrees of temperature, I might learn something. It was so late in the season when this occurred to me, that the weather was not cold enough to begin very low, only as low as 45 degrees.

April 2, the bees seemed quiet in cellar, so far as I could tell with the noise of the outside wind. The window and doors had been wide open, and a gale had been sweeping through the cellar, so that the air could not be otherwise than pure. A thermometer on the top of colony No. 2 showed 45 degrees, the same as outdoors. Putting my ear to the entrance of the hive, I could hear only a low murmur, and it seemed to me that I could hear just a very little rattling of the wings such as bees make when it is too cold for them. But I could not make sure of that. If, fortunately, they were just a shade too cold, then I ought to be able to catch a point of entire silence with the rising of the temperature, if there is a point of temperature at which bees are generally, if not always, silent. This was at 8 a.m. I immediately closed the window and the outside door, leaving open the door between the bee-room and the furnace-room. At 8:30 the thermometer on the hive stood at 49 degrees; at 9 o'clock it was 52; at 10 o'clock, 53; at 11 o'clock, 55.

Much to my surprise—and I may say to my disappointment—during these changes of temperature, I could discover no difference in the murmur of the colony. If there was any difference it certainly was very slight. At 11 o'clock, as stated, the thermometer on the hive showed 55 degrees, and the outdoor temperature was 54. I shoved the fire in the furnace, and at noon it was 56 degrees on the hive. I thought there was a distinct increase of the murmur, but it is hard to be positive about a thing for which you have no absolute measure, especially when you must remember from one hour to another. At 12:40 it was 62 degrees; at 1 o'clock, 64, and by this time the bees were quite a bit noisier and were irritable, so that the mere presence of my head at the entrance (was it the odor?) stirred them up. At 1:30 p.m. it was 62 degrees, the fire having been dampened, and by 3 o'clock it was 60, where it remained until 6 p.m., when the cellar was thrown open. During the afternoon the noise of the colony remained, I *think*, about the same as at 11 a.m. I should say the bees were noisy, but not nearly so noisy as they are sometimes, nor did they seem inclined to run out of the hive as they sometimes do.

I was little the wiser for my observations. I know the bees are quieter at 45 degrees than at 64, and I think that the point of greatest quietude—if there be such a point—is somewhere not very far from 45 degrees. But I certainly have no positive and exact knowledge about it, and I respectfully refer the problem to Dr. Phillips.

(*Concluded in September.*)

Feeding Bees Sugar Syrup

BY GEORGE SHIBER.

A MINISTER friend of mine, in the course of a talk, made the remark that "we should not wait until our friends are dead before giving them the bouquets they are entitled to." I believe he is right. I need the largest one I have. I wish I could have it even brighter and larger than I can build with this pen.

Turn to page 78 of the American Bee Journal for this year, "Effects of Feeding Sugar." I have read it over several times. It reads truth and common sense. No one could doubt that the writer had been in the bee-yard and handled bees—yes, handled them "a whole lot." He may live to be a very old man, but he never will write a sounder article than that.

I was a blundering lad just commencing with a few bees in 1888, and for years later there were bee-keepers who recommended, in the bee journals, to extract the honey from a colony in the fall and feed sugar syrup, that the difference in the price of the two would be the gain. As the editor says, "It looks good," I am sure it could only be attended by loss. Never in a single case could it be made a profitable operation. Exceptions may be thought of, such as honey-dew in whole or part, or poor honey; but even then I do not think it would be the best thing to do to extract all the stores in the fall and feed syrup.

By the way, has anybody done it on a very large scale? Take an apiary of 200 colonies, and extract all of the honey in the several brood-chambers in September. Say! you will have a job on your hands. It is much easier said than done. Oh, yes! it *can* be done, but I should want good wages for the work.

What shall we do if the stores are not of so good a quality as we should like, and would not winter the bees

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Apiary of Geo. Shiber, of Randolph, N. Y

safely? The simplest way would be to give them about 15 pounds of sugar syrup of a 2 to 1 mixture (2 pounds of sugar to 1 pound of water). This would be their winter food, *i. e.*, their cold weather food. The honey-dew would be used for building up in the spring, and would be satisfactory for that.

The stores in a normal colony the last of September will occupy this position in a 10-frame hive: The 4 outside combs will be pretty well filled, the 2 next will be about half filled, and the 4 center combs will be nearly empty, except at the corners. The syrup we feed will go in these 4 center combs, right where it is wanted for winter.

Mr. Byer, I am sure, will not lie awake worrying about whether his bees will winter successfully on said combs of honey. He doesn't need to. But he should worry some about getting enough in the hives for all the bees' needs in the spring. I regard it as almost a joke, this necessity for a winter brood-nest of empty combs below the honey, for my bees cluster clear to the top of the frames, and over them and under the cushion during winter.

Randolph, N. Y.

[We are proud to say that the editorial praised in this article is from the pen of Dr. Miller. Like Thiers, the first president of the young French republic, our co-editor is brighter in his 80's than at any other time of his life.—C. P. D.]

Extracted Honey Preferred

BY C. F. GREENING,

(*Ex-Vice-President of Minnesota Bee-Keepers' Association.*)

IN the American Bee Journal for May, I note a slight controversy, "Comb *vs.* Extracted." I advocate extracting. With a little diplomacy I have had no trouble during the last 36 years in disposing of all nice extracted honey for home consumption.

Now for my method. First, teach your customers that they are getting more sweet by eating extracted. Second, who would ask his stomach to digest that which raw muriatic acid won't affect? No wonder we are troubled with stomach disorders when we demand it to digest beeswax. Again, the customer gets 25 percent more weight of clear honey for a dollar than he would comb. To work up a trade I do as follows:

I invite my prospective customers to call on me and see me *extract* honey; not strain it from mashed-up old combs, brood, bee-bread, and miller grubs. Let them see that I extract *honey* only, the other ingredients I do not get. Invite the little "tots" to come in, and tell them to bring a few hot biscuits with them, and we will have a feast, as I will furnish some butter and all the honey they can eat. I have done thus repeatedly, and made it win every time, besides putting a happy smile on each child's face. I ask my little friends to bring their syrup pitcher, and I fill it with nice clear honey for *them;* then note how soon the parents come with a gallon pitcher to be filled, and pay for it too, and order a supply for winter.

Put your honey up in nice 1, 2, 5 and 10 pound glass jars with a neat, clean label, "Warranted absolutely pure extracted honey," and with your signature attached. If you have any standing in the community for reliability, you will be surprised at the amount you will sell right at home. But I think I hear you say, "It costs to give 5 or 6 gallons of honey away." Well, it costs to advertise in any paper, and I eliminate the middleman by getting at the customer direct. I can produce more than 1½ pounds of extracted honey to one of comb. I am extracting from combs that I have used for 20 years, and they appear good for 20 more; good and tough, won't break or melt down.

In good years I have no trouble in securing 150 to 200 pounds per colony. In 1912 I sold for cash $86.45 from 6 colonies, without one cent of cost for sections, guides, cases, or extra work. This year I am after a new record, and propose to get an average of 225 pounds per colony. My swarming for the year is done during May. I have not had a natural swarm for 5 years, but simply tell the bees that I will attend to that, and their duty is to gather honey, and to keep everlastingly at it. No more demoralization during the honey-flow, by swarms piling out when they should be in the field. No stringing up to form wax to build new combs, losing the good honey-gathering time, and leaving the parent colony worthless for several days.

It took me 30 years to discover that my children did not have to watch the bees for about 4 months every summer, and now the grandchildren escape the duty. It is so easy when we *know how.*

Grand Meadows, Minn.

[Friend Greening, we are with you on every point but one, and that is the damage that the broken crumbs of wax may do to the stomach. We know that doctors differ on many points of similar nature, so we will leave this matter for them to settle, but we cannot help thinking that the indigestible wax is harmless in the intestinal tube. We believe it is eliminated without harm.—Editor.]

The Law On Sugar-Fed Bees

BY FREDERICK A. GRIFFITH.

A MISSOURI State court at Kansas City recently declared 170 hives of sugar-fed bees within 100 feet of a city neighbor's house a nuisance, and gave a restraining order compelling the bee-keeper to move his bees within a month.

The testimony showed that on account of being sugar-fed all summer, the bees, like rich men's pampered offspring, were fat, lazy, and prone to forage close at home. Consequently, they foraged on every available sweet inside or outside of the neighbor's house; stung his baby into insensibility, and kept the whole family in constant dread.

The writer, who is a lawyer as well as a bee-keeper, and defended the bee-keeper, was convinced by the testimony of many witnesses that the bees in this particular instance were a nuisance, and realized before progressing far that it was a "hopeless case." The

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court, by his decree, showed that he also shared in that opinion.

The National Bee-Keepers' Association, after investigation, recommended an amicable settlement beforehand, if possible. But the bee-keeper was obstinate, and determined to fight it out. He called as a witness Mr. M. E. Darby, of Springfield, State Inspector of Apiaries, but Mr. Darby was not permitted to testify, because he had no personal knowledge of the facts in this particular case, and the court precluded any testimony as to other people living close to bees without being disturbed.

The evidence disclosed that the bee-keeper had established his bees at the outskirts of town, which had gradually grown up to his bee-yard.

It *used to be* the law that if a certain noxious or objectionable trade was already established in a place remote from habitations, and persons afterwards came and built houses within the reach of its noxious effects; or if a public road was made so near to it that the carrying on of the trade became a nuisance to the person using the road: in those cases the party was held entitled to continue his trade, because it was legal before the erection of the houses, or the making of the road. That was on the supposition that persons who erect and occupy dwellings where they may be affected by a nuisance already erected and maintained, have no legal right to complain of the annoyance it may occasion them.

But that is not the law of modern civilization. The law broadens with education and experience, and the modern broad-minded rule, as now laid down by the courts, is that such a doctrine would render the property of others subordinate to the purposes of him who might, before they had erected their dwellings, have devoted his own property to an offensive and unwholesome business. Bee-keepers, as a whole, are the most law-abiding citizens in the universe, but there is no sound principle of law that will protect any man in depriving others of the substantial use and enjoyment of his property. In other words, *the individual should submit himself to the convenience of the crowd.*

Kansas City, Mo.

[It seems to us rather strange that any one should feed bees all summer, since it would be a very expensive outlay. But there is nothing strange in the annoyance that may be caused to near-by neighbors by an ill-managed apiary. We had a friend once who was in the habit of opening his hives without smoke. The bees rarely stung him, but they would sting the neighbors, when disturbed. It was with difficulty that he was prevailed upon to use more caution, when all trouble was brought to an end.

In the above case, we are under the impression that an investigation would have shown that the bees were short of stores, instead of being "fat and lazy."
—EDITOR.]

Original Color of Wax

BY C. P. DADANT.

IN the April number, page 131, one of our correspondents says that "the darker the honey, the darker the wax will be." We reserved this question for a special discussion, for we felt that this statement needed correction.

The color of wax produced by the bees ought not to be difficult to ascertain. Yet if we look back among authorities, we find that there are a number of statements leading to the idea that wax is not always white at the moment of its production. Quite a discussion was elicited, in L'Apiculteur, years ago, by the statement made in that magazine, by an observer, Mr. Gaurichon, that the color of combs depended upon the temperature at the time they were built. He held that wax produced when the temperature is 92 degrees is yellow, while that produced at lower degrees is whiter and whiter, as the temperature lowers. At the very time when we read his statements, our bees were producing the whitest kind of combs at a temperature which was fully blood heat. In fact, I do not believe that it is possible for them to manipulate wax unless the warmth of the hive is normal. But every large producer knows that during the production of white honey, whether white clover, alfalfa or other plants, the wax is white whether the temperature be hot or cold.

Some writers assert that wax is originally pale yellow. Cowan says, "Wax, when pure, is pale yellow, but sometimes nearly white, and the coloring is due, as Dr. Planta has pointed out, to pollen consumed by the bees." (The Honey-Bee.)

Huber, in making experiments (Unedited Letters), made a triple test of comb production with colonies fed with honey, dark brown sugar and white refined sugar. Those fed with the white sugar "produced comb less white than those fed with either brown sugar or honey."

Reaumur, who published his work on insects in 1740, was one of the most capable scientists of his time, and a member of the Royal academies of France and St. Petersburg, and of the Royal Society of London. No one then knew that bees produced wax by consuming honey. He, however, surmised that it was made by digestion, but thought pollen was the crude material from which it was made. So he called the pollen "crude wax." To prove that it was not real wax, he made several interesting experiments, such as kneading it with the fingers, trying to melt it by the heat of the lamp, or throwing it in water, where it sank instead of floating as wax does.

Although unable to detect how the wax was produced, he readily ascertained and proved in his Mémoires, Vol. V., page 428, that "any new comb is white, differing only by its greater or less whiteness. I have seen sometimes that the white of the newly constructed combs yielded in no way to that of the finest candles near which I had placed them.

"Among the newly made, those which appeared the least white, might be compared to inferior white candle, or to such as, having been kept too long, has turned yellow. As they grow old they turn yellow, the oldest becoming of a brown color which approaches the black of soot......The art of bleaching wax appears to be thus only that of removing the foreign matter which has penetrated it."

Bevan, page 390: "At first the combs are delicately white, semi-transparent, and exceedingly fragile; in a short time their surfaces become stronger, and assume more or less of a yellow tint."

Prof. A. J. Cook, in his "Bee-Keeper's Guide," says: "In the transformation into comb the wax may become colored. Dr. Planta has shown that this is due to a slight admixture of pollen. It is almost sure to do this if the new comb is formed adjacent to old, dark colored comb. In such cases chippings from the old soiled comb are used."

Dzierzon says in "Rational Bee-Keeping:" "In continuing their structure, the bees......often bite off old wax and use it in making cells. When, therefore, bees build new cells in the hive in continuation of old ones, these new cells are of a darkish color at their commencement, and only gradually assume the white color which new wax possesses. Queen-cells are generally of the color of the comb on which they appear, because the bees take the wax for royal cells chiefly from cells in the neighborhood."

Girard, in "Les Abeilles," says that "the little scales of wax which one may remove from the wax-secreting organs with a needle, are more brittle and less white than those of fresh built cells." He ascribes this to a modification caused by the saliva of the bee. The fact is that the manipulation by the bee kneads the wax and changes its "pearly whiteness" into a dead white color. The same change may be made by the apiarist in chewing a piece of wax. He will render it less transparent but lighter in appearance.

Cheshire, Langstroth and others agree that the combs are white when first built. Root speaks of new wax as "of pearly whiteness which soon becomes yellowish."—A B C of Bee Culture.

Whether or not the bees color the wax by consuming pollen, there is no doubt that the gathering of pollen of bright color has some influence upon the color of the wax shortly after the comb is built. Some flowers, such as the Spanish-needle (Bidens), yield bright yellow pollen in profuse amounts. The bees which visit the blossoms appear to have rolled in it. This bright color is promptly imparted to everything about the hive, the combs of course becoming tainted quickly.

In a conversation which I once had with an experienced wax bleacher (long ago deceased), Mr. Merkle, of St. Louis, I was informed by him that the wax produced along the low lands of the Mississippi and Missouri rivers retained its bright, deep yellow color so persistently that they never succeeded in making it perfectly white by the ordinary bleaching methods.

Mr. Wilder, to whom this subject

was mentioned, wrote as follows: "Like you, I know that dark honey does not produce dark wax. If anything it is the contrary. Whether the other colors affect the color of combs, I can't say. I am inclined to think that the color of the pollen the bees gather when the comb is built influences the color of the comb. The bitter weed which yields a very yellow pollen and a very yellow honey gives us a bright yellow comb. But when I chew this beautiful yellow comb for some time, it loses its yellow color and is about the color of best grade wax.

"Partridge pea, which does not yield nectar from the blossoms, but from the base of the leaves, gives us nearly water-white honey. At the close of the season it blooms, but it yields only pollen from the blossom. This pollen is very yellow, and colors all the combs of beautiful white honey. We will take further notice of these matters and report."

In concluding this study, we may assert positively that dark honey does *not* give dark wax.

Hamilton, Ill.

DR. MILLER'S ANSWERS

Send Questions either to the office of the American Bee Journal or direct to
DR. C. C. MILLER, MARENGO, ILL.
He does NOT answer bee-keeping questions by mail.

Saving Empty Hives

Please tell us when we shake on foundation for foul brood whether the frames should be new, or can we cut the old comb out clean and use the frames again? I don't want to buy frames for 50 hives if it is unnecessary. VIRGINIA.

ANSWER.—Generally it is considered best to burn up the old frames, but when one has so large a number as you have I think it pays to clean them up and use again. At any rate, that is what I did with a number. After cutting out the combs I put the frames into a big iron kettle holding a half barrel of water into which was put 2 pounds of concentrated lye. The water, of course, was heated, and the frames were kept in the kettle until all wax and glue was melted off. Then the frames were rinsed in cold water to get off the lye.

Tearing Down Queen-Cells

What causes the bees of a swarm (taken from a building and given a frame of brood for encouragement) to start and seal several queen-cells, and *in a few days, less than a week, destroy them all?* CALIFORNIA.

ANSWER.—I don't know. It happens not infrequently that when something unusual takes place, such as the introduction of a new queen, or the removal of the brood, as in your case, the bees start queen-cells, and then sometimes tear them down later. It looks a little as if the bees said to themselves, "There's been such a break in brood-rearing that there must be something wrong with our queen, and we must take steps to rear one to take her place." Then, as the queen keeps laying regularly, they say, "The old lady seems to be on her job all right; guess we may as well tear down those cells."

Shifting Colonies—Injudicious Manipulation

1. We had 4 colonies of bees cast second swarms. We put the young swarms on old stands, and at the end of seven days we moved the parent colony to a new stand. Do you suppose the old colony will collect a surplus?

2. We had an immense colony of bees in a double-deck 8-frame hive, or 16 frames altogether. This was the last colony to swarm, and on June 19, it cast the biggest swarm I ever saw. We moved the parent colony and set the swarm in its place. Now it looks to me as if both are extremely populous. I have a notion to let them alone just as they are, and not move the old hive to a new stand. What do you think of it?

3. We have read a good deal about foul brood, but never saw any, and don't want to. It is our opinion that too much manipulation, such as shook and shaking, have a tendency to lower the vitality of bees, as "Hope deferred maketh the heart sick," may apply to bees as well as to vain humanity. Low vitality means a good chance for disease. We notice that the American people have a great tendency to accept the easy way, regardless of what the outcome may be. They do not believe that "By the sweat of your brow you must earn your bread." I am a great admirer of Nature, and also of the lower insects and animals, and do not care to disturb them from the even tenor of their ways, consequently I think that too much manipulation has a tendency to begin disease in bees. Of course, this may be far fetched. What is your opinion of it? IOWA

ANSWERS.—1. Most likely they will be well stocked for winter, seeing that you are having a great flow, and also seeing that the old colony would already have filled with honey all space not occupied by brood and pollen.

2. In such a heavy flow both may do well enough, except that the mother colony may send out an after-swarm within a week or 10 days after the prime swarm.

3. There is much to be said on both sides. Injudicious and ignorant meddling may do a lot of harm; intelligent management may do a lot of good. As to foul brood, when it happens that bad cultivation of the ground will start a lot of weeds without any seeds of weeds being present, then it may happen that you can get foul brood started without any of the bacilli or spores that cause the disease. At the same time it is true that if a colony is weakened by bad management, it will succumb to disease where a vigorous colony might entirely resist it

Introducing Queens

I have had trouble in introducing laying queens on account of the bees starting cells. I have always lost about half of the queens I tried to introduce. Would it be perfectly safe to shake about a pound of bees taken from three or four different colonies into an empty hive containing about three combs with no brood, and confine these bees three or four days, in the meantime introduce a queen in the regulation way, brood to be given later? Would these bees be likely to swarm out after they were released? OHIO.

ANSWER.—Yes, practically the plan has been used, the bees being put in the cellar or other dark place. They ought not to swarm out afterward.

Let me give you one of the kinks I have used in introducing a valuable queen. It is the old bees, and not the youngsters, that make trouble when a step-mother is given them. So the thing to do is to get the field-bees out of a hive before the queen is given. That is a thing very easily done. Just set the hive in a new place, and leave on the old stand a hive with one of the brood-combs. When the gatherers return from the field they will go to the old stand, and in 24 hours the old hive will have in it no bees more than 16 days old. As a matter of convenience I lift the old hive from its stand, setting it close by, put the new hive with one frame of brood on the old stand, put on this the supers if there are any, and then put on the cover, and then set the old hive over all. At the same time the caged queen is put into the upper hive. By the time the bees have eaten out the candy and liberated the queen, or some time before it, all the field bees have joined the lower hive, and the queen is kindly received by the younger bees. In two or three days, when the queen has begun to lay, the hive may be returned to its original place, and the fielders will make no trouble when they enter.

Equipment for Comb-Honey—Locations

1. I wish to engage in the production of comb honey, what style and size of hive would you advise me to adopt?

2. Would you consider the Danzenbaker hive practical in a large apiary? If not, please give your reasons.

3. If you were to start again from the beginning, intending to make bee-keeping your life calling, and had no ties to bind you to any particular locality, where would you be likely to settle? ILLINOIS.

ANSWERS.—1. The 10-frame dovetailed would be a safe venture.

2. A single objection would bar it out for your use. I had more pollen in sections with one Danzenbaker hive than with 50 others, probably because of its shallowness.

3. I don't know. I would do a lot of investigating before settling. What might suit me might not suit you. I'm growing more and more to think that there's a good deal of equality in locations, advantages and disadvantages. I used to envy Californians. I'm not sure I would care to be there now, since knowing more fully about it. In general, the place where one happens to be is "not so worse" as it might be.

Finding Quean—After-swarms

1. It seems to me that directions as to shake swarming, when to be practiced on colonies with clipped queens, are deficient in that it is not stated what is best to do when one cannot find the queen so as to cage her. This may be caused by the queen remaining in the hive. I have not been able in any case this year to find the queen.

2. Do you think it better to sit while examining colonies, frame by frame? There might be less danger of losing the queen than when standing upright, for when so doing, the frame is so much farther away from the top of the brood-chamber

3. I have just seen that the parent colony of a hive that swarmed about a week ago, and which I placed next to and at right angles to the hive containing the swarm, has all of half a dozen queen-cells. Will this, if left by itself bring on after-swarms, or will the first emerging queen kill the others? It would seem to be of some advantage to have these cells undisturbed, as should one queen fail to return from her mating flight, there would at once be others to take her place. PENNSYLVANIA

ANSWERS.—1. You can get along very well without finding the queen at all when you shake a swarm. Shake and brush *all* the bees from the combs you take away, and then you will be sure that you have not taken away the queen. If you want to take with the combs enough bees to take care of the brood, put an excluder over the hive, set an empty hive-body over this and put therein the beeless brood. In the course of an hour or so enough bees will have gone up, when you take the brood away with no risk of taking the queen. Of course, you can shake back part of the bees if more have gone up than you want.

2. So far as losing the queen is concerned, I think it makes very little difference. Even if it were the other way, and there should be just a little more danger of losing the queen when sitting, I should still prefer to have a comfortable seat. A person of youth and vigor may stand it to work all day standing up, but he can stand it at least a little better to sit down. I think I am lasting longer because I made a practice of sitting in my younger days. But I think the queen is a little bit safer when you are sitting.

3. Left to itself, the mother colony with a lot of queen-cells will be likely to send out one or more after-swarms. If there should be a cessation of the honey-flow, that might discourage further swarming. There is no such thing as a virgin failing on her wedding-trip and a younger sister taking her place. When the first virgin emerges from her cell, she makes it her business to slaughter all her baby sisters in their cradles before making her wedding-trip. If the workers allow this, there will be no more swarming. If the workers stand guard over the royal youngsters and prevent the young queen from killing them, then she will issue with a swarm. The thing for you to do is to move the old hive away just a little before it is time for the second swarm to issue. Never mind about that right-angled business. When the prime swarm issues put it on the old stand with the mother close beside it. Then a week or so later move the mother close beside it. Then a week or so later move the mother to a new stand 10 feet or more away. That will deplete the mother of all its field-force, and the workers will feel so discouraged that they will allow the oldest virgin to finish the others.

European Foul Brood

We would like very much to have you give your experience with European foul brood. We find that the blacks get it the worst in the majority of cases. We have been requeening with Italians the past two years, but that does not seem to help much; our home yard, where we have the best blood, seems to be the worst.

The disease appears about May 1 in this locality in a few old cells; mostly those that are capped over. About May 15, we find a few bad cases where the white larvæ has died, and from May 15 up to July 1 there are very few if any colonies that do not show a few diseased cells. We may go through a colony and find only a few cells, and within the next 10 days all the brood will be dead. It is worse this year than we ever saw it before. We have had a light, slow honey-flow since the first of May.

We are practicing your plan mostly, making the colony queenless for 10 or 15 days, then giving a ripe cell or virgin. But where the case is bad the bees will not clean up before the queen commences to lay. Even if they do the colony will not build up in time for the honey-flow, and the next year they will catch it as quickly as the rest.

We divided one colony that did not show any disease, leaving three frames of larvæ and queen on the old stand. The brood and bees we set to one side and gave a queen from a diseased colony, and while it shows a few cells, it is strong enough to work in the super. The colony with the three frames of brood and the queen took the disease and had to be treated.

None of the colonies are "boiling over" with bees as they should be. We have about 000 colonies to care for, and it looks rather discouraging. Any help you could give us on this matter would be greatly appreciated IDAHO.

ANSWER.—I can add very little to what I have already given in this Journal, unless it be to emphasize the importance of having colonies strong, and to add to that the importance of being very prompt in treatment. You are quite right that European foul brood is a very persistent disease, and yet for your encouragement I may say that I am getting good crops of honey from colonies that have shown the disease. To be sure, it takes very little European foul brood to pull down the yield of honey, yet at the same time I can refer you to 2 colonies that were affected this year, from each of which I took 3 supers of 24 sections each before July 10, with 5 supers still left on each, and others have done nearly as well. The 4 or 5 supers left on the hives in these cases are crammed with bees, unless it be the top one, which may not yet be occupied.

You say you "may go through a colony and only find a few cells, and within the next 10 days all the brood will be dead." Don't wait that 10 days, but treat as soon as you find a few cells. In my apiary a colony that shows a single cell of the disease is at once treated.

You say, "None of the colonies are boiling over with bees as they should be." It's your business to make them strong, if you have to unite three into one all over the apiary. You'll gain by it in the long run. If you cannot get them strong enough in a single story, then use two stories or more.

You say you are practicing my plan mostly of "making the colony queenless for 10 or 15 days, then give a ripe cell or virgin." If you will look up my later writings, you will find that is not my plan. The way you are doing leaves the colony without a laying queen for 20 or 25 days, which depletes the colony unnecessarily without any compensating good. I think I get as good results by leaving the colonies 8 or 10 days without a laying queen. If the case is at all bad, and the queen is not vigorous, I kill her, and at the same time give a virgin just hatched or a ripe cell, so that in 8 or 10 days from the time the old queen stopped laying the new one will begin. But I rarely treat a colony in that way now, for I don't allow a case to get very bad, and the queen will generally be still vigorous. If a case is found early in the spring, I wait until the honey-yield is on, but after that I don't wait after a single diseased cell is found. I cage the queen for 8 days, and that is all there is of the treatment. But there is no use to fool with a weak colony.

Here's the whole thing in a nutshell. When the flow is on, make the colony *strong*, leave it 8 days without eggs being laid in the hive, and in most cases the cure will be complete.

Not Working in Supers

I secured a colony of bees this spring. They have swarmed nicely, so I now have 3 colonies. The fields are full of white and red clover, but still my bees are not gathering honey. What can be the cause of this? Would you advise new queens? WISCONSIN.

ANSWER.—When bees throw their energies into swarming it interferes with their storing. If your colony had turned its whole attention to storing instead of sending out those 2 swarms, you'd have had a tidy amount of honey. But with its force divided up into three parts, you may get little from either of the three. But you might have had one swarm and still a fair amount of honey. Here's what to do next time: When the prime swarm issues, hive it and set it on the stand of the parent colony, setting it close beside the parent. About a week later move the parent away to a new stand. That will throw all the field-bees of the parent into the swarm, and the swarm being thus strengthened ought to do good work on the harvest if it is a year of good harvest. Of course, it is possible beside all this that you might have better stock. That's a thing I can't guess about. But it would be a safe venture to risk a dollar for an untested Italian queen, and then you could see whether the new blood would do better than the old. I might add by way of postscript, that if you ever get your bees trained so that they will never think of swarming at all, you can count on a good deal more honey. Let me hasten to add that I have never been able to get all my bees into that way of thinking. Yet there are some of them each year that never start a queen-cell, and they are the ones that give bumper yields.

Prime Swarms Return to Parent Colony

My prime swarms invariably, after I hive them, leave the hive and return to the parent colony.

My hives are all new and up to date, and I can't account for this. If you can cast a little light on this subject it will be appreciated. MINNESOTA.

ANSWER.—That's just the way my bees do, and it's a good deal better than to have queen, bees, and all going off to return no more. The reason my bees do so is because the queens' wings are clipped so they cannot go with the swarms, and when a swarm finds out the queen is not along there is nothing for it to do but to return to the old home. Of course, I don't know anything about it, but as you have things "all new and up to date," my guess would be that you have lately begun bee-keeping, and have bought colonies with queens whose wings have been clipped. If that isn't the right answer, then I don't know what is the answer. It occasionally happens, where queens are not clipped, that a swarm returns because something has happened to the queen so she cannot fly, but to have it happen "invariably" with whole wings is something beyond me.

Bees Carrying Out Young Live Bees and Larvae

Why do bees bring out young live bees and larvæ, and can anything be done to stop it? Has the weather anything to do with the case? NOVA SCOTIA.

ANSWER.—It is the work of the larvæ of the wax-moth, generally called wax-worms, and the weather has nothing to do with it. About the only remedy is to keep strong colonies of Italian blood. Indeed, a rather weak colony of good Italian blood will keep the moth at bay.

California Privet—Alfalfa in the East

1. Can you tell me if California privet is a honey-producing plant, and, if so, whether it produces a good quality of honey?

2. Also, does alfalfa yield honey in the East? I have seen it stated several times in prominent farm journals that alfalfa gives no nectar in the East.

3. Where can I obtain the most complete list of honey-producing plants?

I want to take this occasion to congratulate you on your Journal. It improves with each issue, and it is a great pleasure to peruse its pages. NEW JERSEY.

ANSWERS.—1. I don't know. Who can help us out? My guess is that it doesn't amount to much, merely from the fact that little or nothing has been said about it.

2. I think the rule is that east of the Mississippi river alfalfa never yields any nectar to speak of. Alfalfa grows finely on my place, and occasionally I have seen a few bees on the blossoms, but never to amount to anything, and I think this is generally so east of the Mississippi. Seems to me, how-

ever, that a more favorable report has been made by some one in Wisconsin or New York.

3. You will find no more complete list than you will find in Dadant's Langstroth or Root's A B C and X Y Z.

Value of Colony, Swarm, Etc.

1. What could I afford to pay for a swarm of bees hanging where they clustered if it was the first that issued from the hive?

2. What would a good strong colony be worth if it was in an old box-gum; or how much if it was in a movable 8-frame hive?

3. How would it do to take 4 frames from a strong colony, the 4 frames being covered with bees and almost full of brood, but no queen, put them in a hive, and place them on a new stand? Do you suppose that it would do any good? My bees are doing fine.

KENTUCKY.

ANSWERS.—1. I don't know. So much depends. One swarm may have two or three times as many bees as another, even when both are prime swarms. In some places you might get a swarm for a dollar from some one who got little from bees, and in another place an experienced bee-keeper might not be willing to sell such a swarm for five times as much.

2. Again there would be great variation. A colony in a movable-frame hive might be worth in some places $7.00 or more, in other places $5.00 or less. To a beginner, a colony in a movable-frame hive might be worth $3.00 or $4.00 more than one in a box-hive; to an experienced bee-keeper the difference wouldn't be nearly so much, for he could easily change to a movable-frame hive.

3. It would do after a fashion, but you cannot rear **a** queen of best quality in any such slipshod way.

Best Bees for Washington

Owning an 80 acre tract of land in White Salmon, Wash., which already has 20 acres of bearing orchard, and balance of which is being cleared, and will be put to orchard and berries, with probably an abundant range, I intend next spring to place thereon a few colonies of bees.

If you will kindly do so, I would appreciate your advising me the best work on bee-culture for a beginner, and also tell me the breed of the bee best adapted to my needs, and where it would be best for me to secure them with which to start my venture.

MINNESOTA.

ANSWER.—Dadant's "Langstroth on the Honey-Bee," and Root's "A B C and X Y Z of Bee Culture" are standard works and excellent.

If you want the bees merely for the purpose of fertilizing fruit blossoms, there is probably little choice. For the production of honey you can hardly do better than to get Italians. A copy of the American Bee Journal will give you a list of reliable names from whom you can obtain bees, and out of them you can choose the one located most conveniently. It will be better to obtain bees from as short distance as possible, on account of the high express charges.

A Living from Bees

I have 37 colonies, and have had some experience in handling bees. Would you advise a man to enter the bee-business depending upon obtaining honey—the profit to make a living income?

OHIO.

ANSWER.—The number of men who make their entire living from bees is very small. Nearly all who engage in the business have some other business in connection with it. Unless a man has had experience with bees so that he feels sure from that experience that he can make a permanent success at it, it would not be advisable for him to think of undertaking bee-keeping as a sole business. Even then, in most places, he should have enough ahead to be able to stand a year or more of failure; for in most places a year of failure of the honey-crop will sometimes occur, and sometimes two or three such years will come in a string.

Returning Swarms—Good Queens

1. I have, or did have, a very strong colony from which I made a strong division. They had been doing very good work in the super until today, when they swarmed. Could the swarm be hived back into the same hive if the new queen or queen-cell was destroyed, and would they continue to work in the super?

2. Does it impair the quality of the queen to clip her wing?

3. What would you think of a queen that fills every cell in most of the combs with eggs, and in numerous places has eggs in half-built cells, and in cells filled with bee-bread?

4. Is such a queen the kind to have with a strong colony in the honey season?

5. What should a person do with a colony at wintering time that is so strong that it would properly fill two hives, but only having one queen?

OHIO.

ANSWERS.—1. When the colony swarmed there were a number of queen-cells in the hive. If you destroy all of these and return the swarm, in probably 49 cases out of 50 the bees will swarm out again within a very few days. If you destroy the old queen and all the cells but one, no swarm is likely to issue. Or, destroy the old queen and listen each night with your ear to the hive for the piping of the first young queen that emerges from her cell, and the next morning destroy *all* queen-cells in the hive. The young queen will emerge from her cell and begin piping a week or a little longer after the swarm issues with the old queen.

2. I have kept my queens clipped for many a year, and never could discover that it hurt them a particle.

3. That is just what every good queen should do, except laying in a cell containing pollen. When you find eggs in a pollen-cell you may generally count that laying workers are present, although it is possible that occasionally an otherwise good queen may do such a foolish thing.

4. Yes, she ought to be all right for that.

5. If the bees cannot be contained in one story, let them winter in two. The probability, however, is that when winter comes the bees will not find themselves uncomfortably crowded in a single story.

Southern Queens in the North—Leather-Colored Italians—Distance Queens Male

1. Would it do to send to Texas, or other warm countries, for queens? Would they stand the cold up here in New York State and be hardy?

2. Would the golden or leather-colored Italians be the best?

3. Do you think queens would mate with drones a mile away? There is a big woods between us.

NEW YORK.

ANSWERS.—1. So far as I know, queens from the South do just as well as those reared farther north, and just as hardy.

2. There is variation in both, but the leather-colored, as a whole, are generally preferred.

3. Yes, a distance greater than that would not prevent meeting.

Homestead Lands for Bees

Is there any homestead lands in the United States that would be good territory for an apiary?

IOWA.

ANSWER.—I am not well informed as to homestead lands, and I hardly know to whom to refer you for information. In general, it may be said that nearly everywher there is more or less pasturage for bees, and the chances are a little better in the newer than in the older regions, because in the older regions the territory is pretty well occupied with bees, especially where pasturage is better than the average. Possibly you could get satisfatory information by writing to any one who has given you information in any way about these unoccupied lands. You would likely get some information by applying to the Government offices. Nothing, however, would be better than to visit and see for yourself something about the honey-plants to be found. This thing of finding good locations for bees is a troublesome matter, for just as soon as a good location is found it is likely to be occupied.

Honey-Vinegar

I am told that good vinegar can be made from honey or cappings. Will you give how much honey or cappings to each gallon of water, and how to proceed to make it.

ILLINOIS.

ANSWERS.—I think the most I know about making vinegar is what I have learned about how it is done by Dadant & Sons, and as they are experts at it, I will ask them to give you the information at first hand.

[Use one to one and one-half pounds of honey to each gallon of water. Dissolve the honey as much as possible and place in a barrel with the bung removed so as to give as much air as possible. The warmer the place it is stored the better, as this will hasten fermentation.

If you use capping washings for making vinegar, a good way to test if the water is sweet enough, is by the use of an egg. If the egg floats on the surface of the liquid then it is about right.

To hasten fermentation you may also add a little vinegar mother if you have it, to your sweetened water. Full instructions may be found in most bee-books.—EDITOR.]

Changing Stock—Keeping Honey

1. I have 77 colonies of black bees, and use the 10-frame hive for comb honey. I wish to change my stock. What kind of bees will be best?

2. How is the best way to make the change?

3. Is rearing queens the cheapest? How is the best way to rear them?

4. Will comb honey keep in a glass case, 800 pounds or more stacked close together?

GEORGIA.

ANSWERS.—1. Each different race of bees has its advocates, but probably by far the greater number of bee-keepers prefer Italians, so you cannot be far out of the way in adopting them.

2. The quickest way would be to buy a new queen for each of your colonies. The cheaper way, and the way generally adopted, is to buy one or more queens of good stock, and rear your own queens. You can get a tested queen and rear from her, or you can get 3, 4, or more untested queens, and rear from them.

3. How to rear the best queens is not a matter that can be answered in a few words. Indeed, a whole book has been written about it, "Doolittle's Queen-Rearing," and although the book is excellent it has hardly exhausted the subject. To make a success at queen-rearing one should have as a foundation a pretty good knowledge of the general principles of bee-culture, such as can be found in our excellent works on bee-keeping. If you have not one of these already, it will pay you ten times over to get one at once. Even after you have made a thorough study of such a book, with the

special information in "Doolittle's Queen-Rearing," plenty of questions are likely to arise which will be gladly answered in this department. This department is not intended to take the place of a book on bee-keeping, but to supplement it, and it can supplement it only by having the book come first. It may be that you have already made a study of some good book, and that there are special points that trouble you, in which case I'll be glad to do my level to answer, so far as I can.

4. Yes, if it is in best condition when put in the cases it will continue so unless in a room which is bad about inviting dampness. If the honey is not thoroughly ripened it will not be so well to have in the cases where little or no air can get to it. In that case it is better to have it stacked up in supers with blocks at the corners, so as to allow a space of half an inch between each two supers. A room where damp salt will dry out is a good place to keep honey. In a place where dry salt will become moist, the honey will become thin.

Pollen on Bees' Feet

I think I have something new this season. My bees have great long things dangling about their feet, and when they alight these thongs lie on the alighting-board to one side of the bees' feet. They are about ⅛ of an inch long, and just as red as can be.

What are these false thongs on my bees' feet? Are they Nature or not?

WEST VIRGINIA.

ANSWER.—I think what you call "false thongs" must be the pollen masses from milkweed. In some cases it gets so bad that the bees can hardly climb upon the combs, and I have seen the other bees drive them out of the hive. Sometimes the bees are fastened upon the blossoms, not being able to tear away, and if you examine the milkweed blossoms in your vicinity, you may find some dead bees upon them. But these plants are good honey-plants, and perhaps in this way pay for the injury done to the bees

REPORTS AND EXPERIENCES

Prime Swarm on Parent Stand

In the article by me in the American Bee Journal for July, page 244, under heading of "Prime Swarm on Parent Stand," if you will read the third paragraph carefully and apply the rule of grammer strictly pertaining to a pronoun standing for the noun immediately preceding it, you will read that it was the parent colony that was moved away. How could the parent colony send out a second swarm in 50 hours and no queen to lead them? A virgin queen could not have left 2½ frames filled with eggs. Anyhow, on that supposition, the article would fall flat and not be worth the reading, much less the writing. No, don't make any mistake, it was the prime swarm that came out the second time, and certainly did not get as much gain from the parent colony as it would if I had left it the parent colony, the usual 8 days.

ASSISTANT INSPECTOR FOR IOWA, MR. J. W. STINE, OT SALEM.

I am using that method altogether this season, where they swarm in spite of all I can do, only I break up, double up, or use the brood where I can. I have only increased from 41 to 52, and have queens that must have filled more than 20 Langstroth frames during June. WESLEY L. ROBERTS.

Lime Ridge, Wis., July 7.

[We acknowlege error on our part in having put the wrong interpretation on Mr. Roberts explanation.—EDITOR.]

One Way to Pack Bees for Winter

I moved 5 colonies of bees 5 blocks with success in every way. It turned suddenly cold and not a bee was flying. The way I prepare my bees for winter is as follows: I set the hives in small houses which hold two hives. I bridge over the entrances 4 inches from the bottom-boards, then pack planer shavings all around the hives 6 or 8 inches thick. Next I put a ⅜-inch board over the brood frames. It is raised ½ inch above the same. This board has a 5-inch hole in the center, with 2 oblong holes 2x7 at each side. These are covered with 2 thicknesses of burlap; then over the whole I put 2 thicknesses of carpet. The hole in the center is 5 inches in diameter, and is very convenient to feed for winter or spring without disturbing the cluster.

Regarding Mr. Hopkins statement on page 91 (March number), it may do to have the covers sealed down tight in his locality. I am certainly in harmony with the statement on page 79 of the same number, "Ventilation of Hives," as I find it is best for this location. F. LANGOHR.

Columbus City, Ind.

Prospects in Iowa

The fine rain we are having today will lengthen the honey-flow well into July, and possibly to August. I never saw bees do more and better super work than they did this spring. I am enlosing a picture of myself, team and two swarms of bees. I had just come home from inspection work. One of the swarms I shook into a nail-keg, and covered it over with a gunny-sack, and on the other one I drew a large gunny-sack over the limb of bees, and cut the limb and tied them on the side of the buggy. This saved time and bother, for I did not have to take the second trip after my bees, and have to wait for them to settle in a hive.

There is a great deal of foul brood in southeastern Iowa. I find the bee-keepers are very glad to co-operate with me in trying to wipe it out. J. W. STINE.

Salem, Iowa, June 20.

Uses Smoke for Introducing

I am introducing all my queens this season by smoking. All thanks for that article in the American Bee Journal of last October, by Arthur C. Miller. It seems to me to be the most logic of all ways. It is a wonder it was not thought of before I have run in 5 so far, and they seem perfectly at home. I give them perhaps a little more smoke than he suggests after she runs in.

It is a most disappointing season so far; such cold winds and the clover is in bloom. Some days it is too cold for bees to fly. No honey gathered yet. R. HUNT.

Halifax, N. S., June 10.

A Good Report

I have sold so far from 6 colonies of bees $15 worth of honey, and with the clover crop not yet over, and the sweet clover and fall blossoms yet to come, may reasonably expect to get as much more. Most of my honey is produced in shallow extracting frames, and sold as bulk comb honey, though I have also sold more or less in sections and in the extracted form. C. KOELLE.

Hamilton, Ill., July 7.

Many Swarms in Washington

Bees came from their winter quarters in fair condition, and prospects are good so far. I have had more swarms this spring than usual—11 from 28 colonies. I usually get 3 or 4. Some queenless colonies I had to double up in the early spring. I had only 28 colonies for a spring start. O. K. RICE.

Grays River, Wash.

Report from Oklahoma

Bees came through the winter in good shape, and are doing well. There is just enough of a honey-flow to cause fast breeding and lots of swarming.

Anadarko, Okla. R. B. CAMPBELL.

Bees Doing Well

Bees have certainly done fine this year. This is the greatest season we have had for some time. Bees wintered well and bred up fast in the spring, and were ready for the great flow which has come. R. J. HUDSON.

Lebanon, Tenn., June 28.

Much Honey in Kentucky—Hybrids Best

Bees in this locality are "making things hum." White clover, which is usually in full bloom about May 15, is about eight days ahead of schedule time. I have kept bees here for 15 years, but have seen nothing like the present flow from white clover. I produce "chunk honey" exclusively. The inside of the frames is the same size as a sheet of surplus foundation. When one of those frames is full it will weigh about four pounds. I retaill all the honey I can produce at 20 cents per pound. My supers are 5¼ inches deep, and hold 10 or 11 of these frames.

There are two reasons why I follow this plan in the management of comb-honey production. It reduces swarming to the lowest percent in the production of comb honey. The air in the brood-chamber finds an easy means of escape up through these long frames, and is, therefore, a greater relief to the colony than a super of sections can afford.

When the first super is about full, another is set on top, never under. I find, after a very fair trial, the supers are filled much better in using this plan than they are when the empty one is put under the full one. Each added super furnishes the bees additional ventilation—prevents the swarming fever. Now, I have had hives setting side by side with no very marked difference in strength or other particulars except the difference in the frames and sections I have mentioned, but the supers containing the frames outweigh the others from 5 to 10 pounds in each instance.

Another fact I desire to relate: I have some "pure bloods" and several crosses between them and the common or blacks. Well, this cross, crossed, or hybrids, as they are called, simply work all around the "pure stock." One black queen in particular has outstripped the others to an extent that one would have to see to believe.

These hybrids have been "on the rush" from the very commencement of the flow, but not one of them has thus far swarmed June 8, while the others have swarmed, some of them, three times.

I bought several queens last year from a reliable breeder, and I am sure his stock is as represented so far as the race of bees is concerned, but the truth is this hybrid neighbor excels in honey gathering.

E. I. Smith.

Bowling Green, Ky., June 8.

A Missouri Letter

I notice in the July number of the American Bee Journal what Mr. John H. Lovell says in regard to bees not getting any honey from corn tassels. I cannot agree with him, as I have seen bees work on corn tassels often, and once we extracted just after the bees had been working on the tassels quite profusely. I wished to get that honey off so as not to get it mixed with the Spanish-needle that was coming on. We got about 300 pounds of this honey, and when tasting it we thought it would be of no use except to feed back to the bees in the spring, but along late in the winter we tasted it again and found it to be of very good quality.

Mr. E. S. Miles says dandelion yields but little honey. It yields honey here. It comes very early, when the bees do not have anything else to work on.

Some parts of our State have had a splendid honey-flow. Foul brood is very bad in many places in our county, and the inspector has more than he can get around to. There is scarcely nothing done to eradicate the disease in our county so far as I know. The inspector has been here several times, but he only gives instructions how to treat the bees. He has so many places to go, and but few follow instructions. I doubt if there is one-fourth the bees in our county that we had 4 or 5 years ago. More co operation among the bee-keepers of the State and a larger appropriation will have to be had. More work must be done in the future if we are ever to keep foul brood from destroying all the bees in the State.

It is astonishing how few of the bee-keepers take any interest in securing the much needed laws to eradicate bee-diseases But few will lift their smallest finger to help in getting the service of the inspector, or any laws on bee-keeping, if it costs them anything at all. This works a hardship on the few that have to do all to secure these much needed laws.

J. W. Rouse.

Mexico, Mo.

Good Flow from Sweet Clover

We have had, and are still having, an uncommon honey-flow from sweet clover. Something we have never had here, to my knowledge, before.

James Civis.

Belle Plaine, Iowa, July 15.

Classified Department

[Advertisements in this department will be inserted at 15 cents per line, with no discounts of any kind. Notices here cannot be less than two lines. If wanted in this department, you must say so when ordering.

BEES AND QUEENS.

Nutmeg Italian Queens, leather color. After June 1, $1.00.
A. W. Yates,
Hartford, Conn.

Golden Queens that produce 5 and 6 band bees Untested, $1.00; Tested, $3.00.
1A9t Robert Inghram, Sycamore, Pa.

For Sale—Pure Italian Queens, by return mail; no disease. C. M. Scott & Co.
1004 Wash. St., Indianapolis, Ind.

Bees and Queens from my New Jersey apiary. J. H. M. Cook,
1Atf 70 Cortland St., New York City.

For Sale—Choice Golden Queens that produce Golden bees equal to any.
Wm. S. Barnett, Barnett's, Virginia.

For Sale—Golden untested queens 70 cts. each, or $7.25 a dozen. Safe arrival guaranteed. D. F. Talley, R.F.D. 4, Greenville, Ala.

Hardy Northern-reared Queens of Moore's strain of Italians; ready June 15. Untested, $1.00; 6 for $5 00; 12 for $9.00 See testimonial on page 210. P. B. Ramer, Harmony, Minn.

Virginia three-banded Italian queens. Untested, 75 cts. Tested $1.00. All dead queens replaced free. Ready May 15. 6A4t
S. Click, Box 16, Rt. 2, Mt. Jackson, Va.

Day-old Virgin Queens will please you. Good way to get fine Italian stock; 50 cents each, $5.00 per doz. Untested, $1.00. Tested, $1.50. Geo. H. Rea, Reynoldsville, Pa.

Improved golden-yellow Italian queens for 1913; beautiful, hustling, gentle workers. Send for price list. E. E. Lawrence,
2A3 Doniphan, Mo.

For Sale.—Untested queens that produce, 75c, tested, $1.00; hybrids, 30c. S. H Rickard,
9A3t 506 Machesney Bldg., Pittsburg, Pa.

Italian Queens by return mail. Untested, one, 75c; six, $4.25; doz., $8.00. Tested, one, $1.25; six, $6.50; doz., $12 00. 8A1t
L. E Altwein, St. Joseph, Mo.

Will Requeen part of my colonies with Adels. Queens removed are of the Golden Italian strain I offer the one-year old for 50c; this season's for 75c, virgins, 40c.
J. T. Elkinton, Jennings, La.

For Sale.—Fine Golden Italian queens; no foul brood here. Tested, $1.00 each; select tested, $1.25 each. Untested, one, 60c; doz., $7.00. D. T. Gaster,
8A1t Rt. 2, Randleman, N. C.

For Sale.—Untested Golden Italian queens 50c each; 4 hybrid queens, $1 00.
8A2t J. F. Michael, Winchester, Ind.

For Sale.—300 colonies of bees and equipment. Excellent location. Paying proposition. 8A1t F. W. Pease, Lansing, Iowa.

Queens—Improved red-clover Italians, bred for business; June 1 to Nov. 15. Untested queens, 75c; select, $1.00; tested, $1.25 each. Safe arrival and satisfaction guaranteed. 1A1y H. C. Clemons, Boyd, Ky.

Untested Dark Italian Queens; Howe strain, select mated. No other bees in mating distance. Send for circular. One for $1.00; 6 for $4.50; 12, $8 50. Orders filled by return mail. D. G. Litttle, Hartley, Iowa.

Italian Queens—3-band bred from the best stock procurable for honey-gathering qualities. Untested, June, $1.00; after, 75c. Tested, $1 50; select tested, $2.00 5A4t
R. A. Shults, R. F. D. 3, Cosby, Tenn.

Fine Italian Queens—Three-banded. Especially prolific, hardy, and gentle. Unexcelled as honey gatherers. You will make no mistake if you order them. "Come early and avoid the rush." $1 00 each; 6 for $5.50. 6A4t
J. F. Archdekin, Rt. 7, St. Joseph, Mo.

Golden Queens that produce Golden Workers of the brightest kind. I will challenge the world on my Goldens and their honey-getting qualities. Price, $1.00 each; Tested, $2.00; Breeders, $5.00 and $10.00.
2Atf J. B. Brockwell, Barnetts, Va.

Montana Queens, bred in the Musselshell Valley. No other bees within 60 miles; foul brood unknown; all queen candy boiled. Three-banded Italian queens ready June 1. Untested, $1.00. Tested, $1 50. Orders booked now. 6A4t Elso Apiary, Elso, Mont.

Special.—Golden-all-over queens that produce workers of the brightest kind. 5000 mated queens was my sales last season. Untested queens each 75c; 50, $32.50; 100, $60.00. Tested, $1 25. Select-Tested, $2 00. Breeders, $5.00 and $10.00. J. T. Dunn, Queen Breeder,
6A7t Rt. 3, San Jose, Calif.

Untested Italians of J. P. Moore's and Doolittle's stock; 60c apiece; $5.00 a dozen. No disease; safe arrival guaranteed.
6A3t Edward O. Meserve, Ventura, Calif.

The Two B's of quality—Italian Bees and Sicilian Buttercups. For all that is best, unexcelled Untested queens $1 00 each; six for $5.00. 2-frame nucleus with untested queen, $3 50; 3 frame nucleus, $4.00. Buttercup eggs and stock in season. 6A4t
H William Scott, Barre, Vermont.

Golden and 3-band Italians, also gray Carniolan queens. Tested, $1 00 each; 3 or more 90c each Untested, 75c each; 3 to 6, 70c each; 6 or more, 65c each. Bees per lb., $1 25; nuclei per frame, $1.50. A discount on orders booked 30 days before shipment. 1Atf
Bankston & Lyon, Buffalo, Leon Co., Tex.

Quirin's famous improved Italian queens, nuclei, colonies, and bees by the pound, ready in May. Our stock is northern-bred and hardy; five yards wintered on summer stands in 1908 and 1909 without a single loss. For prices, send for circular. •
Quirin-the-Queen-Breeder, Bellevue, Ohio.

Golden and 3-band Italians, also gray Carniolan queens. Tested, $1 00 each; 3 or more 90c each. Untested, 75c each; 3 to 6, 70c each; 6 or more, 65c each. Bees per lb., $1.25; nuclei per frame, $1.50. A discount on orders booked 30 days before shipment 3Atf
C. B. Bankston, Buffalo, Leon Co., Tex.

Moore's Strain and Golden Italian Queens Untested, $1 00; six, $5.00; twelve, $9.00. Carniolan, Banat and Caucasian Queens, select, $1 25; six, $6.00; twelve, $10.00 Tested, any kind, $1.50; six, $8 00. Choice breeders, $3.00. Circular free. W. H. Rails, Orange, Calif.

One of our customers (J. A. Carnes, M. D., Mt. Carmel, Pa., writes. "Your bees are evenly marked; all golden but the tip. They are the most GENTLE bees I ever handled." Untested queens, $1.00 each. Send for wholesale prices. C. W. Phelps & Son,
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Three-Banbed Italian Queens and Bees. Untested queen, 75c each; six, $4 25; twelve, $8.00. Tested, $1.25 each; six, $7.00; twelve, $12.00. For select queens add 25c each to the above prices. Nuclei without queens, 1-frame $1.50; 2-frame, $2.50; 3-frame, $3 00 1-lb. bees, $1.50. ½-lb. bees, $1.00. Add price of queen wanted with bees.
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We will requeen all our 2000 colonies this spring with young queens bred from our best home and imported Italian stock. We offer the one-year old queens removed from these hives at 40c each; untested queens, this year's breeding, 60c each. Special reduced prices for 100 or more, either old or young. We breed for business, not look

No disease; delivery guaranteed. Book orders now to insure early delivery.
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CHOICE QUEENS from June to Sept. 1 at $1.00 each; six for $5.00. Place orders now, and have them filled in rotation 5Atf
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FOR SALE—Guaranteed pure-mated 3-band Italian queens. I recommend 4 points: Gentle, prolific, extra good honey makers, good winterers. J. E. Hand strain. State Inspector's certificate Queens by return mail or your money back Select untested, 1, 80c; 6, $4.00; 12, $8 00; 25, $15 00
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MURRAY'S famous North Carolina bred Italian queens (red clovers and goldens) for sale again. As good as the best; no foul brood known. They are as good honey-gatherers as can be obtained, and winter as well. My improved strain is carefully selected, and bred up from Moore's, Root's, and Davis' improved stock. Select untested, one, 75c; doz., $8.00. Tested, $1 25. Select tested, $1.50; extra select tested, $2.00. Breeders, $3.00 and $5.00.
H. B. Murray, Queen-breeder, Liberty, N. C.

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"NULL'S FAMOUS MELILOTUS HONEY." Sample for stamp. Null Co., Demopolis, Ala.

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6A12t 173 S. Water St., Chicago, Ill.

FOR SALE.—Fine, Rich, Pure White Clover Honey; also Light Amber Alfalfa. Put up in any size packages, any quantity. Write for prices.
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FOR SALE

FOR SALE—Empty second-hand 60 lb. cans two cans to the case, good as new, 25 cents per case. C. H. W. Weber & Co.,
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THE NUMBER of enquiries coming in for honey labels has been so large that we have decided to put in a stock of these for the convenience of our readers Should you be in need of anything in this line, send for a copy of our label catalog, which will be sent free. American Bee Journal,
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YOUNG MARRIED MAN wants steady employment in apiaries; 12 years' experience. Furnish best of references. Will go anywhere. Newton Cale.
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FOR GOOD QUEENS AND QUICK SERVICE, you can't do better than place your order with me. I am prepared to handle any size of order at the following prices (Carniolan, 3-band Italian and Golden): One untested queen, $1 00; six for $5.40; twelve for $9.60. One tested queen, $1 50; six for $8.40; twelve for $15.60 One-frame nuclei, untested queen, $2.50; six 1-frame, $15.00; one-frame nuclei, tested queen, $3 00; six 1-frame, $17.40. Full colonies, one for $7.50; two for $14.00. If more frames are wanted than are listed, add $1.00 each for as many frames as are wanted with nuclei. No disease, and satisfaction guaranteed. W. J. Littlefield,
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I was the first to import the true Gray Caucasian Bee into the Occident. They are bred under my instructions in the Caucasus Mts. expressly for me. Their WORTH is unexcelled. Send for prices to

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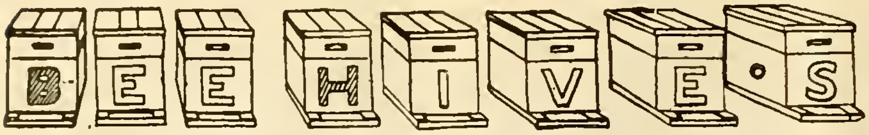
American Bee Journal



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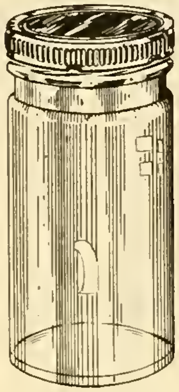

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We will ship from Detroit, Mich., or Minneapolis.

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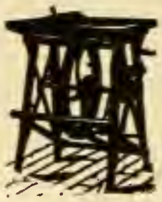

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Three-Band and Golden Italians, Caucasians and Carniolans

July 1st to October 1st	1	6	12
Untested - - - -	$ .75	$4.25	$ 8.00
Tested - - - -	1.00	5.50	10.00

Tested, $1.50 each; and Select Tested, $2.00 each.

All queens are reared in strong, vigorous colonies, and mated from populous nuclei. Instructions for introducing are to be found on the reverse side of the cage cover.

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Please mention Am. Bee Journal when writing.

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Tested queens in March; untested, after April 1st. About 50 first-class breeding-queens ready at any date.

PRICES: Tested, $1.25; 5 for $5.00; Breeders, each $5.00. Address

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Those queens are bred from best imported strains. If any queens should prove to be impurely mated, we will replace them free of cost. Prices:

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Untested -	$1.00	$5.00	$ 9.00
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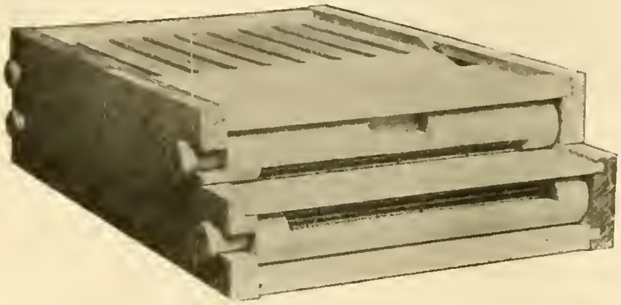

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When you
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Proper Ventilation for Honey Flow.

PRICES: $2.00 F. O. B. LIVERPOOL, FOR 8 FRAME SIZE.
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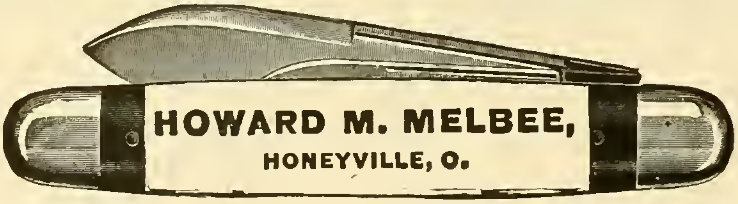
Dr. Chas. G. Schamu, Liverpool, N. Y.

BEE - KEEPER'S NOVELTY POCKET - KNIFE



Your Name and Address will be put on one side of the handle as shown in the cut, and on the other side a picture of a Queen-Bee, a Worker-Bee, and a Drone-Bee. The handle is celluloid, and transparent, through which is seen your name. If you lose this Knife it can be returned to you, or it serves to identify you if you happen to be injured fatally, or rendered unconscious. The cut is the exact size; it is made of best steel. When ordering be sure to write exact name and address. Knife delivered within two weeks after we receive order.

Price, postpaid, $1.00; or with a year's subscription to the American Bee Journal—both for $1.80; or given FREE as a premium for sending us 3 New subscriptions at $1.00 each.

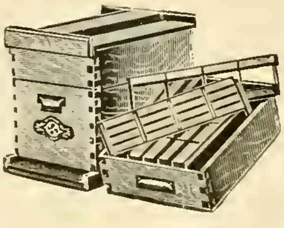
American Bee Journal, Hamilton, Illinois.

AT LITTLE ROCK, ARK.,

You can get Bees, Queens, and Bee-Supplies and save time as well as money.

Nuclei	1 Fr. with Untested Queen	$1.75
"	1 " " Tested "	2.00
"	2 " " Untested "	2.25
"	2 " " Tested "	2.50

1 Untested Queen, 75c; 6 lor $4.20
1 Tested " $1.00; 6 " 5.70



Golden Queens or 3-Banded Queens

No one will give you better or quicker service.

W. J. LITTLEFIELD COMPANY
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BY MAIL Has your "forgettery been working? And right this minute you need foundation or other items. See page one of our catalog, and it gives parcel post rates on various articles.

BY EXPRESS Larger shipments than can go by mail we can rush out at once. Parcel post and express orders receive our first attention.

BY FREIGHT Our rule is, "Ship same day as order is received," and we break it only when absolutely necessary. Notice that Lansing is the railroad center of Michigan from which freight shipments can be delivered quickest.

☞ And we fill all orders with Root's Goods. Just remember that, too. Send for catalog. **Beeswax wanted.**

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Established 1885

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Write for our 64-page catalog free, and for lowest prices on supplies. Full information given to all inquiries. We handle the best make of goods for the bee-keeper. Freight facilities good. Let us hear from you.

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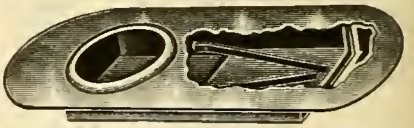

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SAVES {HONEY TIME MONEY} AT ALL DEALERS

Each, 15c; Dozen, $1.65, postpaid

If your Dealer does not keep them, order from Factory, with complete instructions.

R. & E. C. Porter, Mfrs.
Lewistown, Illinois

3-Band Long-Tongued
Red Clover Italian
QUEENS

FOR SALE.—The 3-band queens are of the A. I. Root Co's improved long-tongued bees which have proven themselves to be the best of honey-producers. I use the Doolittle and Miller plans for queen-cells. One untested queen, 75 cts; 6 for $4.00; 12 for $7.50; 25 for $13.50; 50 for $25.00; 100 for $45.00. Double this price for tested queens. One-frame nucleus, $1.50. 2-frame, $2.50; 3-frame, $3.50. To each nucleus add the price of queen. No personal checks accepted

J. B. ALEXANDER, CATO, ARK

ROOT'S POWER HONEY-EXTRACTORS

Our new catalog is full of information about these labor-saving machines. With the difficulty of getting competent help, the power extractors are being sold largely in this and foreign countries, and the present demand is far greater than ever before. Read what a California producer says in a letter to a disinterested party, which we were permitted to publish:

GENTLEMEN:—I should like to say a few words in favor of the ball-bearing Root Automatic Extractor, as I believe it is as near perfection as it can be. This machine runs so easily that a few turns to get it up to speed is all that is necessary; and the men, while using the No. 17, which I formerly had, could average only 1000 lbs. per day, while with this machine they can average 2000 lbs. with but one additional man. No apiary can afford to be without one of these machines.

I feel like congratulating The A. I. Root Co. for making an invention that is such a satisfaction, financially to the honey-producers' interests.
B. B. HOGABOOM, Elk Grove, Calif.

—HERE ARE A FEW MORE—

A word about the power extractor I purchased from you through H. L. Jones, of Goodna. I found it to work very satisfactorily, and it will do all it is claimed to do and more. I use the gasoline engine for several purposes besides driving the eight-frame extractor, such as driving the washing-machine for the lady of the house, and corn cracking and grinding. I consider it one of the best speculations I made in connection with the apiary.
F. C. GOLDER, Pittsworth, Queensland.

Yours of the 16th, also the brake-band for power-extractor, came to hand. Thanks for sending it so promptly. This is my second season with the power extractor. I would not like to be without it now, even if I had only fifty colonies.
DAVID RUNNING, Grindstone City, Mich., July 10, 1910.

I received the extractor I ordered of you some time ago. It arrived in good shape. I set it up and extracted 143 quarts of honey, sold it at 35 cents a quart. The extractor is just fine—does the work completely.
F. D. KING, Athens, Ohio, Aug. 16, 1912.

The engine I got of you this spring has done fine. We ran it all fall, and never had any trouble at all.
V. V. DEXTER, North Yakima, Wash., Jan. 10, 1911.

For Full Particulars See Our Catalog

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RAMER'S QUEENS

Of Moore's Strain of Italians

Ready June 15

Untested, $1.00; 6 for $5.00; 12 for $9.00

April 28, 1913.

P. B. RAMER, Harmony, Minn.—

Dear Sir:—The 30 queens I got of you in 1911 were the best queens; built up the fastest, and gave the largest yield of honey I have had in twenty years of bee-keeping. My average was 160 lbs. to the colony in 1912, and I lost a part of the flow for want of super room.

Yours very truly,
HALVER J. HALVERSON.
Rt. 4, Preston, Minn.

ITALIAN BEES

Choice Home Bred and Imported Queens

Reared in full colonies

Prices for August:

One untest. queen	$ .90
One tested queen	$1.30
One select tested queen	$1.60
One Breeder	$2.45
One comb Nucleus, no queen	$ .90

½ lb. bees, $ .90; 1 lb. $1.75.

Safe arrival guaranteed. For description of each grade of queens send for free catalog.

J. L. STRONG,
204 E. Logan St., CLARINDA, IOWA

QUEENS OF MOORE'S STRAIN OF ITALIANS

PRODUCE WORKERS

That fill the supers quick
With honey nice and thick.

They have won a world-wide reputation for honey-gathering, hardiness, gentleness, etc. Untested queens, $1; six, $5; 12, $9 00. Select untested, $1.25; six, $6.00; 12, $11. Safe arrival and satisfaction guaranteed. Circular free

J. P. MOORE, Queen-breeder,
Route 1, Morgan, Ky.

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is the best, handsomest and most valuable fruit growers' paper published in the world It is handsomely illustrated and shows the Western methods which have been so successful in winning high prices.

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Better Fruit Publishing Company
HOOD RIVER, OREGON.

Try My Famous Queens

From Improved Stock.

The best that money can buy; not inclined to swarm, and as for honey gatherers they have few equals.

3-Band, Golden, 5-Band and Carniolan

bred in separate yards, ready March 20. Untested, one, $1, six, $5; 12, $0; 25, $17 50; 50, $34; 100, $65 Tested, one, $1.50; six, $8; 12, $15. Breeders of either strain, $5. Nuclei with untested queen, one-frame, $2.50; six one-frame, $15; two-frame $3.50; six two-frame $20.40; nuclei with tested queen, one-frame, $3 00; six one-frame, $17.40; two-frame, $4; six two frame $23.40. Our Queens and Drones are all reared from the best select queens, which should be so with drones as well as queens. No disease of any kind in this country. Safe arrival, satisfaction, and prompt service guaranteed.

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Line Bred

Carniolan Queens!

Carniolans winter with their colonies most populous; build up best in the apiary; enter supers more readily cap their Honey very white; are gentle, and no more inclined to swarm than Italians, if properly managed. Ask for **FREE** paper "**SUPERIORITY OF THE CARNIOLAN BEE,**" explaining these bees more fully, and best Management for comb and extracted honey. n limited number of nuclei and 8-fr. colonies for sale at end of June.

Untested, $1.00; doz., $9. Tested, $1.50; doz., $12.

ALBERT G. HANN,
Carniolen Queen Breeder. PITTSTGWN, N.

HONEY AND BEESWAX

CHICAGO, July 18.—Receipts have been quite free for this season of the year, both in comb and extracted. The market is not active, but the quality of the honey is excellent. Prices are ranging for the A No. 1 to fancy comb 16@17c, and extracted 9@10c for the clover and lindens. Amber grades and other white grades 7@8c. Beeswax steady at from 30@32c, according to color and cleanliness. R. A. BURNETT & CO.

CINCINNATI, July 19.—Many shipments of both comb and extracted honey are coming in from all directions, and it is the early shipper who will get the best prices this year. Fancy extracted honey is selling in this market at 8@9c a pound in 60 pound cans, and fancy and No. 1 comb honey at 13@15c a pound, according to the quality and quantity purchased. For choice bright yellow beeswax we are paying 30c a pound delivered here. THE FRED W. MUTH CO.

BOSTON, July 19.—Fancy and No. 1 white comb, 16@17c per pound. Fancy white extracted in 5-gallon cans, 11@12c. Beeswax, 30c. BLAKE,-LEE COMPANY.

NEW YORK, July 18.—There is no new nearby comb honey on the market as yet; some few shipments have been and are arriving from the South and selling at from 13@16c per pound, according to quality and style of package. Of course, it is rather early as yet for us to expect to have new crop comb honey from New York State and nearby, and it may be another month from now before we will receive the first shipments. In fact, the season is not over yet and from reports we are daily receiving, basswood seems to be now blooming, and promises a fair crop. There is a fair demand for extracted honey, principally new crop from the South, common grades selling at from 65@70c; choice grades at from 75@85c, and sometimes 90c per gallon. Old crop California is well cleaned up, and we do not expect new crop from there until next month. Beeswax steady at 31@32c per pound. HILDRETH & SEGELKEN.

SAN FRANCISCO, July 17.—The new crop is very late in materializing. Fancy water white 15@16c; dark to amber, 14@14½c per pound; water-white extracted, 9@9½c; light amber, 8@8½c; dark from 6@8c per pound. Beeswax 30@31c for nice yellow wax, and 24@29c for darker grades. Not much honey or wax is being offered.
JOHN C. FROHLIGER.

KANSAS CITY, MO., July 15.—The receipts of new comb honey are more liberal, and up to date we have had no trouble to sell upon arrival at $3.50 per case of 24 sections for No. 1 white, and $3.00 to $3.25 for amber. We quote white extracted at 8@8½c per pound. Beeswax at 25@28c per pound.
C. C. CLEMONS PRODUCE COMPANY.

DENVER, July 10.—A few cases of new crop comb honey are coming in, and bring $3.50 for No. 1 white, and $3.20 for choice in a jobbing way. Prospects at this writing are for a light crop in Colorado. We quote extracted honey in a jobbing way at the following figures: White, 9c; light amber, 8c; strained, 6¾@7c. We pay 26c per pound in cash, and 28c per pound in trade for clean yellow beeswax delivered here.
THE COLO. HONEY-PRODUCERS' ASS'N.,
Frank Rauchfuss, *Mgr.*

INDIANAPOLIS, July 17.—A large crop of honey has been secured in the central States, but prices are not yet established. Much honey is being offered by producers, but they do not name any price. I think that within the next few weeks we will have established prices. Beeswax is in good demand, and producers are being paid 30c cash, or 32c in trade. WALTER S. POUDER.

CINCINNATI, July 16.—There is very little doing in honey, both comb and extracted. No new honey has yet arrived. General conditions are good for a big crop.
C. H. W. WEBER & CO.

LOS ANGELES, July 15.—Since writing on June 30, quoting light amber honey at 6⅛c, we have received a good many offerings from the producers, and it is possible that the price named could be shaded an eighth of a cent per pound on firm offers.
HAMILTON & MENDERSON.

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PROGRESSIVE POULTRY JOURNAL ?
It is published in Mitchell, South Dakota, and is a live paper devoted to the interests of better poultry and more of it. Has practical writers of experience in raising poultry Well illustrated. Send for free copy.
Progressive Poultry Journal
Mitchell, South Dakota

Three-Banded ITALIAN QUEENS
Nothing but the Leather-Colored Bees bred by me. If you want supers of honey, use my Queens. Perfect Queens of Quality or money refunded. $1.00 each, or $9.00 per doz.
C. S. ENGLE, Beeville, Texas

An Active Season is Here!

A carload of perfectly new goods is just on hand from the factory, and another car is expected any day, and the factory has booked us for four cars. This brings up our assortment so that we can now furnish almost anything listed in the catalog at once.
Hives should be ordered at once if they are to be ready for swarms. Frames, and other inside fixtures, too, should be put together now.
If you are wanting any special goods, orders should be made at once. Other cars are coming regularly from the factory, and we can save you considerable in transportation charges by having your goods come with ours in the car.
The mailing of our new catalog was completed some time ago. If you are not on our mailing list send us a postal-card request for this catalog.
If you want to buy in quantities considerably larger than quoted in the catalog, give us a list of your needs and we will quote price accordingly.
If you have never tried Root quality goods, make a beginning this season. You will not be disappointed in results. Our branch is maintained for service in this line and we can give it to your entire satisfaction.
We are sole agents in Ohio for the Roller Tray Incubator and Brooder—the best in the market. Write for our catalog.

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American Bee Journal

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EQUIPMENT Store room built expressly for the business; large concrete basement with just enough moisture to prevent breakage in sections; no shrinkage in dovetailed corners of supers and hives.

QUALITY Root goods at factory prices. The kind that I have sold for nearly a quarter of a century, and the kind that you can afford to recommend to your neighbors. I might have increased my profits for a short time by handling other goods, but I would not have remained so long in business. Many articles in my catalog can reach you by Parcel Post, and I assume all responsibility in safe delivery of the goods. Catalog free.

WALTER S. POUDER, Indianapolis, Ind.

873 Massachusetts Avenue

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WITH THE SAME TASTE
WITH THE SAME SMELL
WITH THE SAME FIRMNESS
AS THE COMB THE HONEY-BEE MAKES

How do you Obtain Yours?

THE OLD WAY:—By selling your Beeswax. Reasonably sure but expensive.

THE DITTMER WAY:—By shipping your wax to us and having it made into Comb Foundation and then returned to you.

Write us for further information and samples, also prices and discounts on Bee-Supplies

Gus Dittmer Company, Augusta, Wisconsin

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Furnishing bee-supplies has been our business for 22 years. We are also honey-producers, operating several hundred colonies for honey. We have started many people who have made a success of the business. We still furnish them their supplies. They stick to us. You will if you get acquainted. We advocate only practicle articles. Let us mail you our catalog on what you may need.

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APIARIES: Glen Cove, L. I.

Rebuilt Remington Typewriters (No. 6) or Smith Premier Typewriters (No. 2)

Prices, $30 to $35. Send $5.00 down and we will send the machine. **GREAT OPPORTUNITY.** Address,

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This fine 90c Honey-Spoon and the American Bee Journal for one year—both for only $1.75. Send all orders to the American Bee Journal, Hamilton, Ill.

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We are Western Agents for

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Write for Fall Discounts—we can save you money. 1Atf

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OF THE
"NONE BETTER"
BEE-KEEPERS' SUPPLIES

Thirty Years' Experience

Perfect sections from young, white, basswood. White Pine Hives and Supers. Excellent Shipping-Cases, Brood-Frames, Separators, etc. We invite your correspondence.

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ITALIAN QUEENS!

Northern bred

Superior winterers, second to none. My free list explains it all. Untested, $1.00; select tested, $1.50. Bees by pound or half pound. Plans, "How to Introduce Queens" 15c; "How to Increase" 15c; both 25c.

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Golden untested, $1.00; six, $5.00. Tested, $1.50; six, $8.00. Virgin, 40c; six, $2.25; doz. $4.50. Our queens are extra fine this season. Every queen guaranteed to give satisfaction. Ready for shipment direct to customers. Nuf ced. 5AtI

E. A. SIMMONS, Greenville, Ala.

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$1.00 EACH, $9.00 PER DOZEN.

Queens are reared by as good a method as anybody can rear Queens. My stock is hearty and fine honey-gatherers. All queens shipped by return mail within 24 hours after I receive the order.

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NEW CROP HONEY

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Write us. State quantity, quality, style of sections, when ready for shipment, etc. Will buy or handle on commission.

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AMERICAN BEE JOURNAL

SEPTEMBER 1913

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Agl College
Amherst, Mass

Buckwheat in Full Bloom

AMERICAN
ESTABLISHED IN 1861
OLDEST BEE PAPER IN AMERICA
BEE JOURNAL

PUBLISHED MONTHLY BY
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Send all orders to **CORDELE, GA.**, and state from which point you wish your Supplies shipped. J. J. WILDER.

Miller's Strain Red-Clover Italian Queens

By Return Mail or Order Returned

Bred from **superior** breeders for business; gentle; no better hustlers; bees roll honey in; three-banded; **Northern bred;** hardy and vigorous; winter well; not inclined to swarm; bred from best leather-colored strains. Untested, 75 cts.; six, $4.00; dozen, $7.50. Select untested, $1.00; six, $5.00; dozen, $9.00. Satisfaction guaranteed.

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Read what J. I. PARENT, of Charlton, N. Y., says: "We cut with one of your Combined Machines, last winter, 50 chaff hives with 7-in. cap, 100 honey-racks, 500 brood-frames, 2,000 honey-boxes, and a great deal of other work. This winter we have double the amount of bee-hives, etc., to make, and we expect to do it with this Saw. It will do all you say it will." Catalog and price-list free.

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That question has been argued "time and again," but it doesn't worry me one-half so much as does another question,

HOW MUCH CAN YOU SEE?

How many people there are to look and how few there are to see and to think. The best realms for good seeing are in nature.

The Guide to Nature

tells you how.

It teaches people to see the wonders and beauties of nature.

$1.00 per year **10c a single copy**

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The Agassiz Association, Inc.,
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For Both Extracted and Comb Honey

Would like to hear from those having Fancy and Number One Comb Honey. State best price delivered Cincinnati. We want Extracted Honey, too. No lot too large or too small for us. We remit the very day shipment is received.

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P. S.—Ship us your old comb and let us render them for you. Our process extracts the last drop of wax from the slumgum. We make money for you if you will ship us your old combs and cappings for rendering. Write for full particulars.

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We manufacture Millions of **Sections** every year that are as good as the best. **The CHEAPEST** for the Quality; **BEST** for the Price. If you buy them once, you will buy again.

We also manufacture **Hives, Brood-Frames, Section-Holders and Shipping-Cases.**

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Marshfield Mfg. Co., Marshfield, Wis.

American Bee Journal

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This is a 50-cent book which I will mail for 30 cents so long as they last.

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The $1.00 postpaid size I will mail for only 80 cents. It's a fine bee-smoker. Order at once if you want one.

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Till further notice, I will fill orders for "Honey as a Health Food"—the great honey-selling booklet—at the following prices:

Sample copy free; 10 copies 20 cents; 50 copies 75 cents; 100 copies, $1.00; 250 copies for $2.00; 500 copies for $3.75; or 1000 copies for $7.00.

These are all postpaid or express prepaid prices. The time to sell the honey crop will soon be here again. It is a fine thing to have a good supply of the above booklets on hand, ready for distribution among those you would like to secure as customers.

Your Name and Address on a Rubber Stamp

It is a nice thing to have a rubber stamp with your name and address. You can then stamp the letters you write, or the envelops you use, or anything at the bottom of the booklets, "Honey as a Health Food," for stamping your name and address.

I can furnish you a Rubber Stamp, with your name and address, at the following prices, postpaid, the stamp being 2½ inches long:

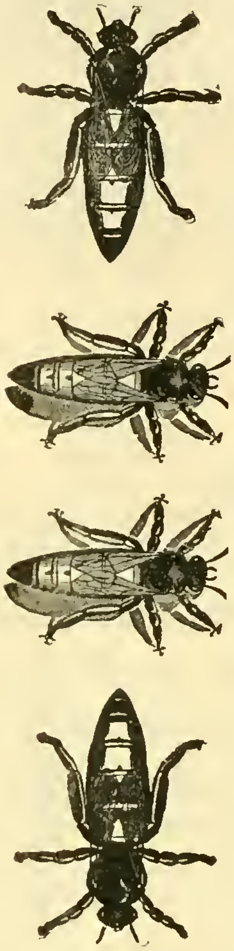
One Line Stamp	30 cents
Two " "	45 "
Ink Pad (2½x3¾ inches)	15 "

All orders will have prompt and careful attention. Address,

GEORGE W. YORK
Sandpoint, Idaho

Untested ITALIAN QUEEN-BEES

OUR STANDARD-BRED



6 Queens for $4.50; 3 for $2.75; 1 for $1.00

For a number of years we have been sending out to bee-keepers exceptionally fine Untested Italian Queens purely mated, and all right in every respected. Here is what a few of those who received our Queens have to say about them.

> American Bee Journal—
> *Gentlemen:*—Last October I purchased three queens of you for my experiments with different queens, and wish to ask you if queens of this season will be of this stock? One of the Queens is the most remarkable queen I ever owned for prolificness, which she transmits to all her daughters.
> Riddle, Oreg., July 4, 1912. L. W. Wells.

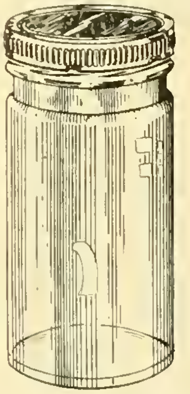
> American Bee Journal—
> *Gentlemen:*—The queen you sent me came in good condition. She was one of the best I have ever bought. I have her introduced and she is doing business as if to the manor born. I want another of those beautiful queens as soon as I can possibly get it for making up my fair exhibit. Please send a fine one. Such queens certainly advertise your business.
> Darlington, Wis., July 31, 1912. C. R. Bridgman.

> American Bee Journal—
> *Gentlemen:*—I bought a queen of you about 35 years ago, and from her I Italianized 150 colonies of the finest beauties of unusual good qualities. I lived near Milton Center, Ohio, at the time. Yours truly,
> Portales, New Mexico, July 10, 1912. J. W. Houtz.

We usually begin mailing Queens in May, and continue thereafter on the plan of "first come first served." The price of one of our Untested Queens alone is $1.00, or with the old American Bee Journal for one year, both for $1.60. Three Queens (without Bee Journal) would be $2.75, or six for $4.50. Full instructions for introducing are sent with each Queen, being printed on the underside of the address card on the mailing-cage. You cannot do better than to get one or more of our fine Standard-bred Queens.

American Bee Journal, Hamilton, Illinois.

SPECIAL PRICES



Honey packages and bottles either round or octagon, with American Metal Screw Can.

Per case of 24, 12-oz. bottles	.60
Per case of 24, 6-oz. bottles	.40

We are closing out our stock, and the above prices will hold good only while the stock lasts.

We will ship from Detroit, Mich., or Minneapolis.

Basswood Shipping Cases

One-piece cover and bottom, complete with 2-inch glass, paper, nails, corrugated paper, or no-drip strips in the bottom. Prices, f. o. b. Minneapolis.

25 cases, holding 24 sections, K. D.	$ 4.00
50 cases, holding 24 sections, K. D.	7.50
100 cases, holding 24 sections, K. D.	14.00

5-Gallon Square Tin Cans

1¾-inch screw cap opening, 10 boxes, 2 cans in a box	$7.50
1¾-inch screw cap opening, 10 boxes, 1 can in a box	4.50

Friction-Top Cans, F. O. B. Chicago

10-lb., with bail, per 100	$6.50
5-lb., with bail, per 100	4.75
5-lb., with bail, per 200	9.00

Minnesota Bee-Supply Co., - Minneapolis Minnesota

Honey Packages

There is a demand for Friction-top Cans and Pails packed in dozen and half dozen re-shipping cases. We have prepared to take care of this demand at the following prices, f. o. b. Hamilton, or Keokuk, Iowa:

	In lots of 10.	In lots of 100
Cases containing 6-10 pound pails, per case	75c	70c
" " 6-5 " " " "	45c	40c
" " 12-5 " " " "	62c	58c

F. O. B. Hamilton, or Keokuk, Iowa.

	100 or more.	500 or more
10 pound pails in crates of 100	$7.25	$6.75
5 " " " "	5.50	5.00

F. O. B. Hamilton, or Keokuk, Iowa.

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60 pound square cans, two per case	80c	65c
60 " " " one " "	48c	40c

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Cans Also Furnished To Dealers.

Big Stock—Immediate shipment on receipt of orders

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AND BEES BY THE CAR LOAD

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Early (FROFALCON) Queens "ITALIANS"

Untested Queens to June 1st $1.00 each. After June 1, 90c each. Special prices in large quantities. A 5-pound bucket of Orange Blossom Honey delivered at your door by express for $1.10.

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The Ripe Honey Man

SHAW QUEENS

By return mail

Three-band Italians. What need say more? Every one knows them. Tested, $1.00 each. Untested, 75c single queen; $7.00 per dozen. No disease, and satisfaction guaranteed.

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CO-OPERATION means buying right and **selling right.** We are a co-operative association, and sell the best Bee-Supplies obtainable at the right prices. It will pay Western Bee-Keepers to send for our Illustrated Catalog.

Colorado Honey-Producers' Association
Denver, Colorado

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FRICTION - TOP PAILS

For
Honey
Syrups
Sorghum
Etc., Etc.

GILLE MFG. CO.,
Dept. S.,
Kansas City, Mo.

Try My Famous Queens

From Improved Stock.

The best that money can buy; not inclined to swarm, and as for honey gatherers they have few equals.

3-Band, Golden, 5-Band and Carniolan

bred in separate yards, ready March 20. Untested, one, $1; six, $5; 12, $9; 25, $17 50; 50, $34; 100, $65. Tested, one, $1 50; six, $8; 12, $15. Breeders of either strain, $5. Nuclei with untested queen, one-frame, $2.50; six one-frame, $15; two-frame $3.50; six two-frame $20.40; nuclei with tested queen, one-frame, $3.00; six one-frame, $17.40; two-frame, $4; six two frame $23.40. Our Queens and Drones are all reared from the best select queens, which should be so with drones as well as queens. No disease of any kind in this country. Safe arrival, satisfaction, and prompt service guaranteed.

D. E. BROTHERS, Attalla, Ala.

AMERICAN BEE JOURNAL

(Entered as second-class matter at the Post-Office at Hamilton, Ill., under Act of March 3, 1879.)

Published Monthly at $1.00 a Year, by American Bee Journal, First National Bank Building

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DR. C. C. MILLER, Associate Editor.

HAMILTON, ILL., SEPTEMBER, 1913

Vol. LIII.—No. 9

EDITORIAL COMMENTS

Some Comments on the August Number

WAX-WORMS IN COMBS.

By way of postscript to remarks on page 258, I may say that years ago I made a practise of sulphuring my sections within a few days after taking them from the hives. That would kill all the little larvae of the wax-moth that were present; but it would have no effect upon the eggs. These would hatch out, and then some 2 or 3 weeks after the sections were taken off I would sulphur again. If I did not thus fumigate the sections, the little bits of worms would soon grow into big fellows that would get the cappings off the sections, making a repulsive sight with their ugly webs. After some years the trouble ceased, and now for years I never think of fumigating at all. The reason is that Italian blood has been introduced, and Italians seem to be able to keep the moths from laying eggs in sections while on the hive, but blacks allow the moths that privilege.

It is a common thing to warn against allowing bits of comb to be left lying around as breeding places for moths. I don't want to encourage slovenliness, but the fact is that in this locality not one time in a hundred will pieces of comb lying around become wormy. A hive of combs left by a colony which died in winter in the cellar will, if left undisturbed, become wormy, as mentioned, and it will be only a question of time when there will be in the hive only a mass of webs. But if a hive filled with frames has stood out doors all winter, it may stand out all the next summer, and will rarely become wormy. That means, of course, that rarely will new eggs be laid in it, for the freezing of winter kills worms and eggs. And this immunity from the moth is true even if the combs are spaced no wider than when occupied by bees. Farther south it may be another story.

ALWAYS SAY WHETHER COMB OR EXTRACTED HONEY.

In that interesting letter on page 258 we are told that from 60 colonies 8000 pounds of white honey were harvested. If that means extracted honey, it's one thing; if it means comb, it's quite another thing; in the latter case being something like 50 per cent more than in the former. In this case it is not as bad as usual, for in Europe extracted honey is the usual, so one is pretty safe in guessing that extracted honey is meant. But too frequently it happens that a bee-keeper of this country reports in that blind way, and leaves us guessing which kind of honey is meant, and there is nothing to guide us in our guessing.

I said the yield was 8000 pounds from 60 colonies. Maybe that's right, and maybe not; for "he has 60 colonies" now, and we are left to guess how many he had when he got the 8000 pounds in 1911.

Let me plead that those who make reports always observe two things: Be sure to say whether the yield is comb or extracted, and also from how many colonies spring count it was taken.

ANOTHER PRECAUTION ABOUT ROBBING.

When there is any danger of robbing, look out about making changes in appearance. In other words, don't offer any new opportunity for robbing. A weak colony may be standing in its place in the apiary during a yield of honey without being at all disturbed by robbers; but let a dearth come, and it is not so safe. But if it be moved to a new place after a dearth has come, the chances are ten times as great that the robbers will pounce upon it. Let a fresh crack, crevice, or opening of any kind be made in a hive during a time of dearth, and robbers will be sure to investigate it, whereas if the same opening had been made when robbers were not bad and left during dearth, the robbers might not give it any attention.

MOVING THAT MOTHER COLONY.

I am moved with compassion for the beginner who tries to understand that passage on page 277, in the middle of the first column, where instruction is given as to how to prevent afterswarms. Here is the pasage: "When the prime swarm issues, put it on the old stand with the mother close beside it. Then a week or so later move the mother close beside it. Then a week or so later move the mother to a new stand." The much-moved mother will be more comfortable and the result will be better if that second sentence be cut out entirely. Then the passage will read: "When the prime swarm issues, put it on the old stand with the mother close beside it. Then a week or so later move the mother to a new stand."

THAT INDIGESTIBLE BEESWAX.

In the interesting article by C. F. Greening, page 274, the second paragraph is likely to excite unusual attention. He gives three points in his method. One is a bit puzzled to understand just what is meant in his first point, where he says: "First, teach your customers that they are getting more sweet by eating extracted." If it were not for his third point, one would understand that to mean that one gets more honey for one's money when buying extracted honey than when buying comb. But that can hardly be the meaning, for that's his third point, where he says, "Again, the customer gets 25 per cent more weight of clear honey for a dollar than he would comb." His first and third points would hardly be identical, so the first must mean something else. Does it mean that extracted honey is sweeter than comb honey? that he can eat more extracted honey than comb? or what does it mean?

The claim that more honey can be had for the money by buying it in the extracted form is a legitimate one, and worth pushing, and it seems Mr. Greening might make the claim a little stronger than he does. It is true that there are some who sell extracted honey at the same price as comb, but they are few. Much more commonly it is the case that where a customer pays 25 cents for a section of honey he can buy a 5 pound can of honey at 15 cents a pound. If the net weight of the honey in the can is 5 pounds, then he buys at the rate of 6 2-3 pounds of honey for a dollar. That section for which 25 cents was paid does not weigh as much as a pound — perhaps 14½ ounces — and when the weight of the wood and wax is deducted the clear honey may weigh 13 ounces. So the 4 sections he gets for a dollar net him 52 ounces of honey, or 3¼ pounds. Comparing that with the 6 2-3 pounds he gets in the extracted form, it will be seen that instead of getting 25 per cent more, as claimed, he gets a trifle more than 100 per cent more. You can change these figures to suit local conditions, friend Greening, but please don't be so modest as to claim only 25 per cent more clear honey for a dollar.

But the second point is the one that is most striking. "Second, who would ask his stomach to digest that which raw muriatic acid won't affect? No wonder we are troubled with stomach disorders when we demand it to digest beeswax." One can imagine a customer to whom that is said replying, "Is that so? I've always liked comb honey best; but if the wax in it is so utterly indigestible I'll never eat any more comb honey." The fact is that most people are very ignorant about what goes on in the digestive tract, and do not know as much about the matter as the farmer does about what his cattle need. He knows that he must furnish his cattle a considerable amount of coarse feed containing indigestible materials for the sake of the bulk and to aid the peristaltic motion of the bowels.

THE BIRTHPLACE OF CHARLES DADANT, MODERNIZED. HE WAS BORN MAY 22, 1817.

If friend Greening allows to enter his stomach only that which can be thoroughly digested and assimilated, he is not very long for this world. Many are beginning to learn that to be healed of constipation, with all the ills that follow in its train, they must give up eating bread made of the finer parts of the wheat, and go back to the whole-wheat flour or bran bread containing the indigestible parts of the grain. Some think that the wax in comb honey has a beneficent effect, but this is perhaps the first time it was ever claimed that we are troubled with stomach disorders because of the indigestibility of beeswax. The probability is that the wax does not have any great effect on the stomach or bowels. As it is not affected by the acids of the stomach, whatever effect it does have must be mechanical, and so beneficial.

Harp all you like upon the cheapness of extracted honey as compared with comb, but please don't try to sell extracted by preaching that comb honey is unwholesome.

The Editor Abroad

During our few days of stay in Paris, I visited the office of L'Apiculture, and was very courteously welcomed by the manager, Mr. D'Autemarche. The July number of the above named magazine contained another excellent commendation of the *sting cure* for rheumatism. A Mr. Lefèvre, age 32, who was suffering of acute rheumatism, with swelling of the joints of the arms, was entirely cured after five days' treatment.

I have also met Mr. Alin Caillas, the honey analyst, a graduate of the National School of Agriculture of Grignan, who is the author of a number of articles on honey, and of a little publication entitled, "Les trésors d'une goutte de miel" (The Treasures in a Drop of Honey). He and his father, who was Secretary of the International Congress in 1900, are located near the Bois de Boulogne, in a delightful spot, We were received in the laboratory.

Mr. Caillas believes that the May disease is nothing but constipation, which has become a contagion. Two of his friends have had it among their bees, and he promised to request them to send samples, at the first opportunity, to Dr. White, of Washington, for examination. A united effort, on both sides of the ocean, ought to result finally in a diagnosis, which will lead to methods of prevention and cure. Dr. White did not find the nosema apis in the samples we sent him the past spring, and we are inclined to believe that this parasite is a result, and not a cause, of the May disease.

In some of the avenues of Paris, I saw the "tilleul argenté," silver-leaf linden, in full bloom. This, I am told, yields a green-colored honey, which must be somewhat similar in shade to our sweet-clover honey.

A VISIT TO GRANDPRE.

Grandpré, the birthplace of my wife's mother, is a splendid spot for bee-culture. Here I visited a bee-keeper who keeps both straw-skeps and movable-frame hives of the Dadant pattern. Strange to say, although he considers the frame hive as much superior, from its greater capacity and the manipulations it permits, yet like most other European apiarists, he thinks best to keep straw-skeps to furnish increase. His movable-frame colonies swarm but very little, for they have all the room they can fill in large extracting supers. In spring, empty combs are placed in the middle of the brood-chamber to increase the laying of the queen by furnishing her a surplus of empty cells.

This gentleman is also a "cirier;" that is to say he is a manufacturer of wax candles. He buys the old combs from bee-keepers and renders them. He bleaches the wax and makes candles, very fine ones, with all sorts of wax ornaments, fringes, etc., shaped by the use of pincers while the wax is malleable. His honey is sold in pails, from one kilo (2.2 pounds) up to 10. The pails are friction top, like ours. These are used everywhere.

Although we are anxious to reach Switzerland and Italy as soon as possible, we still have to visit a number of French spots. France and Switzerland are having a very damp and cool summer. It has been cloudy every day, and it rains often. But the roads and byways are so exceedingly fine that we rarely dampen more than the sole of our shoes. In spite of the very cool weather, considerable honey is harvested. I see many bees on white clover. They are all the common bee. We have not found any foul brood. But we have heard of the May disease, which is described exactly as the Isle of Wight disease.

JOURNEYING TOWARDS SWITZERLAND.

We are slowly wending our way among friends and bee-keepers towards Switzerland and Italy. For the past week we have visited the old haunts of Burgundy, the greatest grape growing districts of Europe. The apiaries are located either in the golden hills above the vineyards, or in the plains where the sainfoin grows. There is white clover in profusion in every pasture, and it is in full bloom; nevertheless the bees are chasing their drones. But in almost every apiary there is a fair crop in the supers. We have found only one apiarist, Mr. Rapinat, who raises honey in sections; everybody else uses either our extracting supers or what they call the horizontal hive, a movable-frame hive containing from 20 to 30 brood-frames, 13x14 or thereabout. The entire crop is thus harvested from the hive-body, no supers. In this instance, the bees are kept on the house roof, in the heart of the city of Chalon.

This Mr. Rapinat has a system of Miller super of his own. Instead of a T he uses a strong, smooth strip of steel, rigid enough to support the sections at each end without bending. He will supply us with a photograph of it. He has very fine honey. They are trying the Italians for the first time. They hesitate in buying them because of the large number of common bees scattered in the villages and hamlets, which will cause mismating.

In Mr. Champion's Park—the Experimental Apiary, with five different systems on trial, Dadant, DeLayens, Voirnot, Cowan, and Cylindrical hives.

Thus far, however, I have not heard any criticism of the Italians. Every one seems to acknowledge their superiority if they can be kept pure and peaceable. This latter virtue is of importance in so thickly settled a country.

GERGY.

Before arriving here, where we were welcomed by Mr. E. Champion, whose guests we are, we visited Dijon, and saw there the ancient place of the dukes of Burgundy, containing the marble sculptured tomb of Jean Sans Peur, of the 15th century, a most delicate piece of architecture which baffles description. The palace is now the Hotel de ville museum (city hall).

The past two days we visited, in company with 8 or 10 bee-keepers, two fine castles, with apiaries in each adjoining park. The last visited, that of Darcy, contains in its cellars, as well as in its old armory, tens of thousands of gallons of both champagne and Burgundy wines. It seems strange to one accustomed to the prohibition ideas of some of our American cities to see wine served on every table. He who would want to eat his meals in a total abstinence hotel, would have to go hungry. It is but just to say that the French wines, slightly mixed with water, make a very safe and palatable drink on account of the very small proportion of alcohol they contain.

In the apiary of Mr. Séger, at Beaune, I saw a feeder made of two wooden troughs, rounded on the inside, instead of the perpendicular walls of our Miller feeder. The inventor says that the bees get into this feeder and climb out again more easily on account of the slanting inner walls. There is some truth in the argument.

Our host, Mr. Champion, is a retired business man, who spends his time among his bees, or in watching his crops, fishing in the Saône, or hunting

The Home of Mr. Champion, in Gergy, France, Where Mr. and Mrs. Dadant Visited the Last of July.

hares and wild boars in the neighboring forest. He is now president of the Société Bourguignonne d'Apiculture, and editor of its Bulletin. It was not my intention to stop here, but his invitation was so pressing, so hearty, that we could not refuse, and we have no cause to regret it. We were promised a quiet bed-room, and all the rest we could wish to prepare for further travel. We have found it, and hereby extend our most hearty thanks to our kind host and his wife. He has given me some fine photographs which will be reproduced later.

We have been made welcome everywhere. We have visited the homes of our forefathers, found their tombstones, and met distant cousins, who remembered faintly that some of the family had gone to America over half a century ago. They were highly pleased to see us. They were shown pictures of our great Mississippi, of our big dam. They asked numerous questions about the language, the customs of our States, as well as about the bees. But they wondered how we could make up our minds to come so far, for most of them never leave their immediate vicinity, and a trip to Paris, 200 miles away, seems to them a wonderful excursion.

However, there is a great change coming, for the automobiles, the electric lights, the trolleys are finding their way to the most remote villages. Castles, which 300 years ago resounded with battle-ax, swords and steel armors, are now supplied with telephones and electricity. The armory of the castle of Dracy, as well as its upper rooms, is lighted with Tungsten lamps, and its gentlemanly owner, who received us with the greatest politeness and urbanity, spoke English as well as French, and had made a visit to America, of which he spoke with great pride.

The weather is now fine, the rains have stopped, and the wheat harvest is on. Fruit is lacking, on account of late frosts last spring. But the grapes are good wherever they have managed to avoid the mildew by the use of the Bordeaux mixture. This is a rich and beautiful country.

ALBERTVILLE, IN SAVOY.

I have just visited one of the most carefully kept apiaries of France, that of Mr. Mont-Jovet, of Albertville, in Savoy. This part of France was once considered abroad as a poor country, devoid of fertility. The stories and songs concerning the little chimney-sweeps, accompanied by "marmots," who roamed all over France to earn an honest but arduous living by displaying their tamed friend and cleaning chimneys, are nothing but folk-lore and prejudice without foundation in modern civilization.

No one understands better than does Mr. Mont-Jovet the advantage of advertising. Before reaching his home, I had read in the Guide of the French Touring Club, that Albertville was renowned for its honey. At breakfast, the hotel waiter brought us each a little round box, holding a tenth of a pound of fine granulated honey. This was marked "Miel De Savoie," with the name of Mont-Jovet as producer. This is furnished by him to the hotels all through that country at $2.50 per hundred. As the boxes cost 70 cents per hundred, it leaves 18 cents per pound for the honey. Of course, it is some trouble to put it up and to sell it, but think of the advertising it does, silently, among the consumers.

The honey of Savoy, under the denomination of "Miel de Chamonise," has a great reputation. It is mainly composed of sainfoin nectar, with a number of mountain plants, alfalfa, locust, linden, etc. Our friend, who has five or six apiaries scattered among the hills, asserts that the honey produced at high altitudes, though more difficult of production, is of better flavor than that of the plains. It is noticeable that the plains surrounding the Alps are but little above the sea, while in the United States the plains west to the Rocky Mountains are already quite high. Thus Denver, at the foot of the Rockies, is at over 5000 feet, which is reached by slow assent in the 800 miles of slope from the Mississippi. So the hillsides of Savoy, and of Switzerland as well, have all sorts of altitudes, from less than a thousand

The Park Behind the Champion Home.

feet at the plain up to several thousand.

The coolness of the climate makes desirable, in cool spring or fall weather, the confinement method, recommended some years ago by Mr. Gouttefangeas, which consists in furnishing the bees good ventilation without light. This method, which in a country of sudden warm days like ours, would prove disastrous in any spot except a cellar, has been quite satisfactory. Mr. Mont-Jovet has kept a colony in fine condition for 80 consecutive days, during December, January and February, while other colonies lost many bees from flight in chilly weather.

In addition to keeping bees in large numbers, our friend was naturally drawn to the trying of new races. His proximity to Italy made it easy to import bees from there. Lately he has tried the Carniolans and the Caucasians. He prefers the Italians and the Caucasians to the others, the Carniolans swarming too freely.

I saw in his apiary a freshly received Caucasian queen which produces fine bees. They have a very slight tinge of yellow on the edge of the abdominal rings. They are large and very peaceable. They behave on the combs exactly like the pure Italians.

We are now at Geneva, a beautiful spot, full of tourists, which appears to me the cleanest city that I have ever visited. We are going to buy a "subscription" (they call it "abonnement") to the Swiss railroads, for a month. This costs 100 francs, $20, and enables one to travel all over the country on nearly all the railroad lines and most of the lakes, without further transportation expense. We expect to visit many apiaries. Have already visited several dozen apiaries in France. The Dadant hive is in use even more than we supposed, all through Europe, and it is a pleasure to be introduced to beekeepers wherever we go, for they are very demonstrative, and often seem inclined to hug us with delight.

We have had a number of rainy days, but the sky is clear now and the weather warm. But the bees were robbing and chasing their drones, at the last apiary that we saw.

The roads are delightful. But the carriages are too heavy for any use,

Castle of Dracy.
The ruined tower on the right hand dates back to the 12th century. Here is produced very fine sainfoin honey. Alfalfa, white clover, and the silver-leaf linden are also good yielders. The linden blooms two weeks later than the other kinds.

The automobile is the thing for Europe. It is a pleasure to ride in it.

C. P. Dadant.

Gergy, July 27, 1903.

Competition

In Europe as in the United States, we meet bee-keepers who are afraid of the competition of others, who consider men in the same line as enemies. We see dealers in supplies who think they must fight other dealers, who consider as a traitor the man who buys imported goods. It seems strange to us. Of course these ideas are not the rule, but we caused great astonishment in some quarters by visiting manufacturers and dealers in comb foundation in a friendly way. Yet is it not best to be on good terms with everybody? There is room for all under the heavens and life is too short to spend any part of it in strife and ill-will to anyone. There is much to gain and nothing to lose in joining hands with others in the same line.

The world is progressing and nations fraternizing. American Jingoism and French Chauvinism have had their day. Progress condemned them.

The Sense of Direction

How do bees find their way? The Journal of Agriculture, in its Jan. 8 number, has this to say, quoting the Scientific American:

> "The directive sense which is possessed by bees is the object of researches made by Mr. Gaston Bonnier, of Paris, and he seems to prove that bees possess a special sense like that of carrier pigeons. Bees can fly for two miles and are then able to return after gathering their supply of honey. Langstroth and others suppose that vision comes into play and that bees can see great distances, and can also note objects on the way so as to find the patch. Others, with Dadant, suppose that the bees are guided by the sense of smell, and that they can smell flowers at 1½ miles."

The author goes on to explain that Bonnier made experiments by carrying bees in a closed box a distance of one or two miles, and that they found their hive when released. He claims that they even can do so when their hives are covered, so that *sight is not essential.*

This matter was discussed in continental bee journals two or three years ago. With all due regard for Mr. Bonnier, whose deep erudition we cannot doubt, for he is the author of a treatise on bees and several works on botany, nectaries, etc., we cannot agree upon the assertion that bees have no need of eyes to guide themselves to their home. We hold that the experiment made to close their eyes when releasing them a couple of miles from home was at fault in some particular.

That bees in normal condition should find their home when released at a distance of two miles has nothing wonderful in it. The wonder would be that they should fail to do so.

Everybody knows, and Mr. Bonnier himself states in his book, that the bees at their first flight "do not rapidly leave the hive, but circle about with their head generally turned towards the entrance." They thus recognize the spot. If they do this where we can readily see their actions, it is reasonable to suppose that they do the same thing after they have raised themselves out of our sight. They do exactly what we do when we go in a strange place. We take note of the different points by which we may recognize the spot.

As bees are known to go two miles and more away from home (some leading apiarists even assert they may go 8 miles), and as their sole occupation at that age is to fly about in search of honey, pollen, propolis or water, we must expect them to become as familiar with the country around as we are with our own vicinity. Should they be confined and carried away to be released even a mile farther than they have ever gone, it is quite probable that after rising in the air, they will be able to recognize some features of the country in the proper direction.

To throw a doubt on the necessity of the wonderful organs which they possess, to say that their eyes are not capable of sight at long distances, and to suggest some imaginary additional sense, is in our opinion absurd. Even the so-called sense of direction of carrier-pigeons who have two eyes, like us, would probably vanish from our fancy, if we could accompany them in aeroplanes. I dare say that the aviators, after flying about a certain section of country for days, learn to recognize points of direction which would be entirely above the perception of the earth-confined mortals.

If we give a minute's thought to the eyes of bees, we recognize their importance in the bee's life work. Two of these eyes, the most conspicuous organs of the head surface, are composed of facets, which are turned to every direction of the compass. Cheshire, whose microscopic studies have not been disputed, gives the number of facets in the compound eye of a worker at 6300, or 12,600 eyes in a single insect. The studies of Mr. Watson, a photograph taken of some 240 of these facets, mentioned on page 8, January number, show that in every facet there is a reproduction of the things before it, just as in my eye you can see your picture when I look at you. To deny that these eyes can see far away, and that the bees are many times better fitted than we are for piercing sight, is to deny the evidence.

But, as bees are in need of both daylight sight and sight in darkness, with quick changes from one to the other as they go to and from the hive, they are provided with three extra eyes, small, round *ocelli* which evidently serve a different purpose from the compound eyes' function.

Whether we believe in absolute design in Nature, or in evolution and the survival of the fittest, or both, as the explanation of the wonderful structures existing in the world, we must acknowledge that nothing could be better fitted than the eyes of bees for its requirements.

If any one still insists that there is a sense of direction, and that the eyes of bees cannot see either far or distinctly in the air, let me ask them how the drones see the queen on the wing, in the immense space? The drones have still more facets to their compound eye than the workers. Cheshire has counted approximately 13,000 on each side of the head of a drone, or over 26,000 organs of vision in the head of a single insect. Is this not a proof that their eyes are necessary in the search for the queen, at the time of mating?

It may be said that the queen emits a peculiar smell. This is practically proven. But if we are to doubt that bees can smell a field of flowers a mile away, we would certainly also doubt the possibility of a drone smelling the queen a hundred feet away.

If the so-called sense of direction really existed, independent of the eyes, why should the bees be unable to find their home at greater distances than they usually travel? Yet, we all know, who have transported bees, that when carried away 5 or 6 miles, very few if any ever return. The instinct of birds, which induces them to go South in the fall and return in the spring, is an entirely different problem. The warm sun in the South and the cold northern winds are the evident prompters of that instinct.

The question of smell and its influence upon the actions of the bees should be discussed separately.

Prof. Sanders Contradicts

Freedom of the press is a good thing, but Prof. J. G. Sanders, of the University of Wisconsin, is likely to think there is too much of it. Some reporter quoted him as saying that sugar was poison to bees, and that has not only gone into the papers of this country, but has gone the rounds of European bee-journals.

Prof. Sanders flatly and vigorously denies that he ever made such a statement. Yet there is little likelihood that many of the publications in which the erroneous statement was found will take the trouble to contradict it.

It seems, however, that some of these questions about sugar in connection with bee-keeping are important enough to be taken up by competent investigators—why not our Washington authorities—so that we could know just what the truth is?

There is the question of beet *vs.* cane sugar. For years the British Bee Journal has strenuously insisted that beet sugar should never be used as winter food for bees. We are told that the two kinds of sugar are chemically alike. Yet in the matter of food there may be important differences that the chemist cannot discover. Still, if it be true that 2 pounds of ultramarine blue to every 100,000 pounds of sugar are used for bleaching, and that the molasses left from beet sugar is not edible, as is the New Orleans molasses from cane sugar, but is highly laxative, even in small quantities, on account of the salicylates present, as well as other chemical compounds, the chemist should have no difficulty in differentiating the two sugars. At any rate, we ought to know whether beet sugar is or is not as good as cane for wintering bees, and be done with all uncertainty about it.

But there are other questions about sugar, even though beet be as good as cane. Probably all agree that in regions where unwholesome honey or honey-dew is practically death to the bees in winter, it is much better to replace these unwholesome stores with sugar. But some hold that good sugar is better for winter stores than the best of honey, while others, especially in Europe, hold that good honey is much better for the bees, and that continued sugar-feeding lowers the vitality of the bees. Which are right?

Again, there is no small difference of opinion as to the financial phase of the matter. Some hold that big money is to be made by feeding sugar when it is worth only half as much as honey; others think it does not pay. One of the questions in this communication that calls for a reliable answer is this: How many pounds of sugar must be *fed* in order to replace 100 pounds of honey of a given density?

Those who will give us reliable information upon these and other questions regarding feeding sugar to bees, whether at Washington or elsewhere, will be deserving of hearty thanks from the bee-keeping fraternity.

C. C. M.

MISCELLANEOUS NEWS ITEMS

Parcel Post Problem Again.—Until the bee-keeper learns to use parcel post intelligently, there will be no small effort made to keep honey out of the list of mailable articles. As long as a person insists on sending stuff without thinking of inconvenience to other people, just so long will there be barriers thrown in the way of extending his trade. Read the article below, copied from the Cincinnati Times of Aug. 8:

> Residents of Zion City received, today, the sweetest bunch of letters they ever got. Business communications were just as honey-laden as love notes. The morning's mail, comprising about 1500 letters, was coated with honey when a jar of the sticky sweet, which had been sent by parcel post, broke as the sack was thrown from a mail car. Post-office clerks tried washing the letters with wet sponges, but the honey wouldn't come off.

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Honey Gin and Orange.—We have notice from the Department of Agriculture of judgment against Furst Bros., Cincinnati, for the misbranding of food products. They put out a beverage so called Honey Gin and Orange, which they claimed to be absolutely pure. The article was misbranded from the fact that it contained in addition to the three above ingredients a quantity of sugar syrup which was substituted in part for the honey. Misbranding was alleged further for the reason that the product contained 23.40 percent by volume of alcohol, and each of the packages containing the product considered as a drug, failed to bear a statement upon the labels of the quantity or proportion of alcohol so contained.

A plea of guilty was entered by the defendants, and they were fined $25 with costs of $15.25. Pity it was not more.

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Death of a Prominent Bee-Keeper in Japan.—We have just learned through our good friend, Mr. John C. Frohliger, of the death of Mr. Jim Sano, proprietor of the Sano apiaries in Japan. Mr. Sano was a young man just entering into the modern methods of bee-keeping, and was a thorough and capable bee-keeper. He was operating extensively, owning, himself, several hundred colonies of bees which he had improved by the importation of good stock both from this country and from abroad.

Mrs. H. S. Duby, of St. Anne, Hiving a Swarm.

Ontario Honey Report.—We are in receipt of the White Honey Crop Report of the Ontario Bee-Keepers' Association, sent out by its efficient secretary, Mr. Morley Pettit. Of the 1243 members in the association, 543 gave a report of their crops. Mr. Pettit comments that the work of the committee would be much more valuable had the proportion been larger.

The average amount secured per colony was 63 pounds. The total for the whole province will be less than usual, however, owing to the fact that the northern and eastern counties got but little surplus, whereas generally they are the best. Some large sales of honey have already taken place in a wholesale way at 11 to 12 cents.

The report gives a complete list of the number of colonies in each county, and the honey produced. Wentworth county has the largest average, with 108 pounds per colony; Kent county, 105 pounds; Welland county, 98 pounds; York county, where Mr. Byer is located, has an average of 92 pounds per colony. The total produced by the senders of the 543 reports is 1,618,489 pounds. Not so bad. Of this, Middlesex county produced 266,500 pounds; Halton county, 137,200 pounds; and York county, 131,200.

HONEY
The Fred W. Muth Co.
204 Walnut St.

A MODERN HONEY CONVEYANCE.

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Ontario Annual Convention.—The following is a complete program of the Ontario Bee-Keepers' Association convention which is to be held in Toronto during the week of the Horticultural show, Nov. 18 to 21 inclusive:

TUESDAY EVENING, NOV. 18.

7:30—Meeting of officers and directors.

WEDNESDAY MORNING, NOV 19.

9:30—Minutes—Morley Pettit, Secretary, Guelph.
President's Address—Denis Nolan, Newton Robinson.
1st Vice-President's Reply—J. L. Byer, Mt. Joy.
2d Vice-President's Reply—Miss Ethel Robson, Ilderton.
Co-operative Work in the Counties—Alex Dickson, Lancaster, Secretary Glengarry Association. Blake Miller, Aylmer, Secretary Elgin Association. R. C. Fretz, Forest, Secretary Lambton Association. All other County Secretaries are expected to join in the discussion.

WEDNESDAY AFTERNOON.

2:00—The Office of Director—What Does It Mean?—R. E. L. Harkness, Irena.
The Swarming Problem—H. G. Sibbald, Claude.
Question-Box—D. Donaldson, Carleton Place.

THURSDAY MORNING, NOV. 20.

9:30—Queen-Rearing—John A. McKinnon, St. Eugene.
The Association Organ—H. B. Cowan, Editor of the "Bee-Keeper," Peterboro.
Question-Box—Jas. Armstrong, Cheapside.

THURSDAY AFTERNOON.

2:00—Address—E. R. Root, Medina, Ohio.
Address—Dr. G. C. Creelman, L. L. D., President of Ontario Agricultural College, Guelph.
Election of officers.
Reports—Secretary, Treasurer, Directors, Committees, Representative to Exhibitions, Judges of Honey.

FRIDAY MORNING, NOV. 21.

9:30—The Question of Transportation—Geo. F. Kingsmill, of Ontario Agricultural College, Guelph.
Notes from the Year's Work—Morley Pettit, Provincial Apiarist.
Question-Box—Chas. Blake, Snow Road.

FRIDAY AFTERNOON.

2:00—Comb Honey Production—D. Anguish Lambeth.
Extracted Honey Production—John A. Lunn, Fingal.
Unfinished Business.

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Pennsylvania Summer Meeting.—The summer meeting of the Pennsylvania State Bee-Keepers' Association will be held in Geo. M. Steele's yard, West Chester, Pa., Sept. 6. The day will be devoted largely to practical demonstrations in up-to-date bee-keeping. Everybody come for a big day.

H. C. KLINGER, *Sec.*

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The Parcel Post.—What seems like the first serious effort of the express companies to destroy the parcel post and to bring back the conditions which were resulting in the excessive profits for themselves, is the effort to have the "Administrative Clause" of the parcel post law stricken out. This would result, of course, in killing the vital force of the law. It would result in the loss of the work of those men who have been fighting for this law for nearly 40 years, and, moreover, it would stop the expansion of this law.

According to newspaper reports there is a movement to expand the parcel post so that parcels up to 100 pounds in weight will be admitted to the mails. The introducer of this would also make the zone system much more simple than it now is. In opposition to this comes the "express gang" who are bent on not being totally destroyed. They count on winning all rather than losing it. It is pretty hard, when a person has been making as high as 1000 percent on the original investment each year, to be satisfied on what the average person makes. So these companies think they cannot be content with what they have.

There is just one way to solve this problem. And that way is for us, the people, to *get busy*. No use to wait for these companies to make the first move, for they have already made it, even though not in the open where we could see it. Letters and telegrams should go from every one who reads this to his or her Congressman, Senator, and to the Postmaster General demanding that the law be let alone, and that the service of the parcel post be extended. *Now is the time.* The longer we wait the more tenacious will be the hold by the opposition.

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The Benton Cage Modified.—Various ideas for the safe and quick introduction of queens are constantly being advanced. A method of introducing without the use of the cage is frequently used and advised, but for the average bee-keeper a safe, easy plan is needed, and the Benton cage is our stand-by.

A new idea modifying the Benton cage is brought forward by Mr. Arthur Stanley, of Chicago, Ill., and deserves a thorough test. Its extra cost may be worth more than the queens it will save. The cage measures ⅞x1¼x4¼ inches, the extra length making a longer passage-way in the end not usually containing candy. This passage-way is filled with candy, and the perforated metal replaced by heavy paper, thus making this end also an opening for introduction. The important feature of the cage is the single perforated queen-excluder fastened just inside the passage-way. The bees of the hive soon eat their way to the excluder, and pass in and out of the cage one by one, thus getting acquainted little by little with their new queen. The excluder prevents the queen from emerging until she is released in the ordinary way.

No time is saved by this method, but a surer method is apparent. The extra weight of the cage, one ounce, makes an extra expense for mailing.

As the passage-way will not admit a queen, she must be placed in the cage either before the screen is entirely tacked on or an opening in the side of the cage must be provided.

August Pictures.—We wish to call the attention of our readers again to the series of seven pictures which appeared in our August number. These photographs are especially interesting on account of the fact that they teach a lesson, especially for the beginner.

Mr. G. E. Morris, of South Barre, Vt., who sent us these, is a very thorough bee-keeper. By the system of swarm control, which he practices, very few swarms are lost.

BEE-KEEPING FOR WOMEN

Conducted by MISS EMMA M. WILSON, Marengo, Ill.

How One Womam Prevents Swarming

Miss Mathilde Candler, of Wisconsin, is one of the few women who keeps bees on a large scale, and one of the very few who keeps bees in an out-apiary. She is a thoroughly practical bee-keeper, and is highly successful. Her plan for the prevention of swarming, which she gives in The Bee-Keepers' Review, shows an ingenious mind, and if the plan is successful with her, there is no reason why it may not be successful with others. For years she tried to prevent swarming by shake-swarming and other methods, trying every method she saw described in the bee papers. She found none of them quite satisfactory. The plan which she finally perfected she thus gives:

"When I find a colony with queen cells containing eggs or larvae I prepare an empty hive body by putting in a few empty frames with or without foundation starters, and also one or two frames containing a little drawn comb to catch the pollen so that the bees do not carry it up into the sections. I take this to the colony preparing to swarm, remove its supers, and take out a frame (any frame with bees and brood) and place it in the center of the hive body, and replace the removed frame with one having a foundation starter in it.

"On top I lay a piece of wire cloth cut just the size of the top of the hive. Over this screen I set the prepared hive body, letting it project forward a little so the bees coming home can crawl up into it from the outside. Care must be taken so the screen lies close and even on the hive, so that the bees cannot crawl in under the screen.

"Now I put on the supers and cover and close the screen at the back (caused by moving the hive body forward) with a piece of lath. I now close the entrance with a board having three one-inch holes covered with the cone bee-escape. All the bees can get out of the hive, but they cannot get back in, so they crawl up the front of the hive into the hive body set on the screen.

"In four days I take off the prepared hive body and screen, put back the sections and remove the cone escape-board at the entrance. The brood-frame may either be returned after destroying the queen cells on it or used in other ways for strengthening nuclei, etc.

"By this method there is no shaking, no absconding, no hunting for queens or pinching off queen cells, no jumping of hives or chilling of brood. It is not even necessary that the queens be clipped. The method can be applied to any kind of a hive.

"The queen destroys the queen cells, and she does a surer job than the apiarist does. There is no interruption in honey gathering, the bees do not feel themselves queenless, and do not rush around frantically hunting their queen; and when they realize that they are separated from their queen, the swarming fever leaves them.

"Of course it is necessary that the cone bee-escape-board at the entrance fits tight so that no bees can get in. Otherwise this plan will not work. Nor is it necessary to wait four days before changing things back; the queen will have destroyed the cells before that time. But I prefer to wait so long to be on the safe side."

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Beauty Value of Honey

"How doth the little busy bee improve the shining hour?" In making honey, of course, for the summer girl, and if she be wise she will heartily appreciate its efforts.

For the building up of the fatty tissue, honey is unequalled, and the maid who sighs for pretty shoulders should eat it morning, noon and night. Buy your honey in the comb to be sure that it is fresh, strain it and spread it on thick slices of white bread. Try this during your vacation, and hollows will fill out, thin cheeks grow plump, and you will come to see why Mother Goose assured us that "the queen was in the parlor eating bread and honey. Doubtless it was a beauty parlor!

The sallow girl, or one who suffers from pimples, will find the same honey diet one of the very best ways of clearing her system and freeing her from constipation, for honey is a natural, beneficial and effective laxative.

Externally honey is just as beneficial as it is internally, as it is softening, whitening and soothing to the skin. If you have any left from your daily diet you can rid yourself of a sunburned neck by the following effective bleach:

HONEY CREAM FOR SUNBURNED NECKS.

Take an ounce of strained honey and stir in four teaspoonfuls of lemon juice. Beat up the white of an egg until it is fluffy, stir in your honey and lemon, then add enough barley meal to make a thin paste. Apply this thickly to the neck at night and wrap a loose cheesecloth bandage about it. Repeat this nightly until the texture of your skin is like velvet and your skin of snowy whitness.—Chicago Record-Herald.

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Helps for a Beginner

Up to three months ago, when I purchased a colony of bees, I had never seen a real bee-hive with bees in it. Bees are doing nicely. I certainly had a time finding the queen but was finally successful and clipped her wings.

Please answer these questions:

1. Of what use is the thick board in the center of the hive body?

2. I haven't an extractor, how can I separate the honey from the combs without one? Please explain this fully.

3. The bees have stored no honey in the super, yet in the hive they have built comb on the different frames and have run three of them together. What must be done to remedy this?

4. When taking the honey, is the super honey all that is taken or is the clear honey without brood taken also from the hive-body?

5. In searching for the queen I took all the frames out, brood-frames included and had them out fully thirty minutes. Was this injurious to the brood? LOUISIANA.

ANSWERS.

1. It is the dummy or division board, but it is not placed in the center of the hive unless one wishes to contract the brood chamber (as in the case of a weak colony or a nucleus) but at one side of the hive, and removed first in order to leave room to easily remove the frames.

2. Cut the comb containing honey into a stone jar, place the jar in a pan of boiling water, and set on the back of the stove, where it will not get over-heated, as that will spoil the flavor of the honey. When it is thoroughly melted remove from the stove. Wax will rise to the top of the jar, and form in a solid cake, which is easily removed, leaving the honey in nice shape. Or if you prefer, you can mash or cut the combs of honey

and drain through a sieve or cheese-cloth bag.

3. You should have had the frames filled with foundation which would oblige the bees to build straight. Either you have had no foundation, or the foundation has come loose. Take out the combs that are built straight so you may have plenty of room to get at the three faulty ones. Now cut away the attachments where the comb has run a little into the wrong frame, push the comb into the proper place in the frame, tie a string around to keep in place, using little wedges of wood if necessary, and turn the middle one of the three frames end for end. Bees do such strange things that it is possible they have built combs straight across on these three frames. In that case there is nothing for it but to cut out the whole thing and begin over again, furnishing at least a guide for the bees to go by. If you have no foundation, cut pieces of the comb—strips an inch wide will do—and fasten them under the top bar, using melted wax for glue.

4. Better leave the honey in the hive body for the bees, giving plenty of super room for the surplus honey. Nowadays it is not considered the proper thing to put combs from the brood-chamber into the extractor.

5. Not if the weather is warm. But in early spring or in cool weather it will not do to expose brood so, as it might get chilled. Also if the flow of nectar is poor it is not wise to expose combs in this way, as you can very easily start a bad case of robbing.

Let me congratulate you. You have the making of a good bee-woman all right. One who has the persistence and courage to find and clip a queen within three months after first seeing bees in a hive, has a future before her.

Mr. Terry Recommends Eating Honey

"Oats are rich in protein and in oil. Eat cream on them if you wish to, but milk will do. If you sweeten the oats be sure this does not lead you to overeat. Extracted honey will be much more wholesome to use than sugar." So says Mr. Terry in the Practical Farmer. Mr. Terry's writings have a wide circulation and no doubt his endorsement as to the wholesomeness of honey will induce more people to use it instead of sugar.

SOUTHERN BEEDOM

Conducted by Louis H. Scholl, New Braunfels, Tex.

The Texas Department of Agriculture and Bee-Keeping

Hon. Ed. R. Kone, of the Texas Department of Agriculture, is taking much interest in the bee-keeping industry of our state, and through his Department, is willing to give all the aid in his power.

He arranged with the writer, more than a year ago, to act as Consulting Apicultural Expert of the Department of Agriculture, and all the apicultural work has been turned over to one person. Thus all communications and enquiries can be given immediate attention.

Another step in the direction of helping the bee-keeper was taken by the Commissioner when he provided for the publication and free distribution of Bulletin No. 24, "Texas Bee-Keeping," a 142 page booklet dealing more directly with conditions and methods applicable in this state. A copy can be secured by addressing the Department of Agriculture, Austin, Texas.

The above arrangement grew out of the great number of enquiries for bee-keeping information received by the Department of Agriculture, not only from within the State but from other states and countries as well.

FURTHER WORK THAT SHOULD BE ATTEMPTED.

It is desirable to keep in touch with the bee-keepers of Texas, so that any information or literature can be sent to them. It is desirable to obtain all the names of bee-keepers in the State. It will be appreciated if bee-keepers will send in, not only their own, but the names of all other bee-keepers that they may know of.

It is also desirable for the Department to have statistics and such other data important for answering enquiries intelligently. All the aid that bee-keepers may give in this direction will also be thankfully received.

GETTING THE BEE-KEEPERS CLOSER TOGETHER.

On account of the great importance of united effort on the part of the producers it is desirable that the bee-keepers should get in closer touch with each other. It is of value to consult about the best methods of producing, harvesting, and more especially of marketing. The Department of Agriculture should be well acquainted with the needs of the producers. Bee-keeping is but one branch of agriculture, and it has to deal with all branches. It should be in a position to provide for lectures on any bee-keeping subject that bee-keepers or other persons interested in bee-keeping, may desire. Such lecture work should be encouraged more by the bee-keepers themselves. Another thing that seems likely to become popular within a short time is a "Bee-keepers' Institute." This could be held in conjunction with the Farmers' Institute. Such Institutes can be made very interesting and profitable and it is hoped that the near future will see many of them organized.

MORE BEE-KEEPERS' ORGANIZATIONS NEEDED.

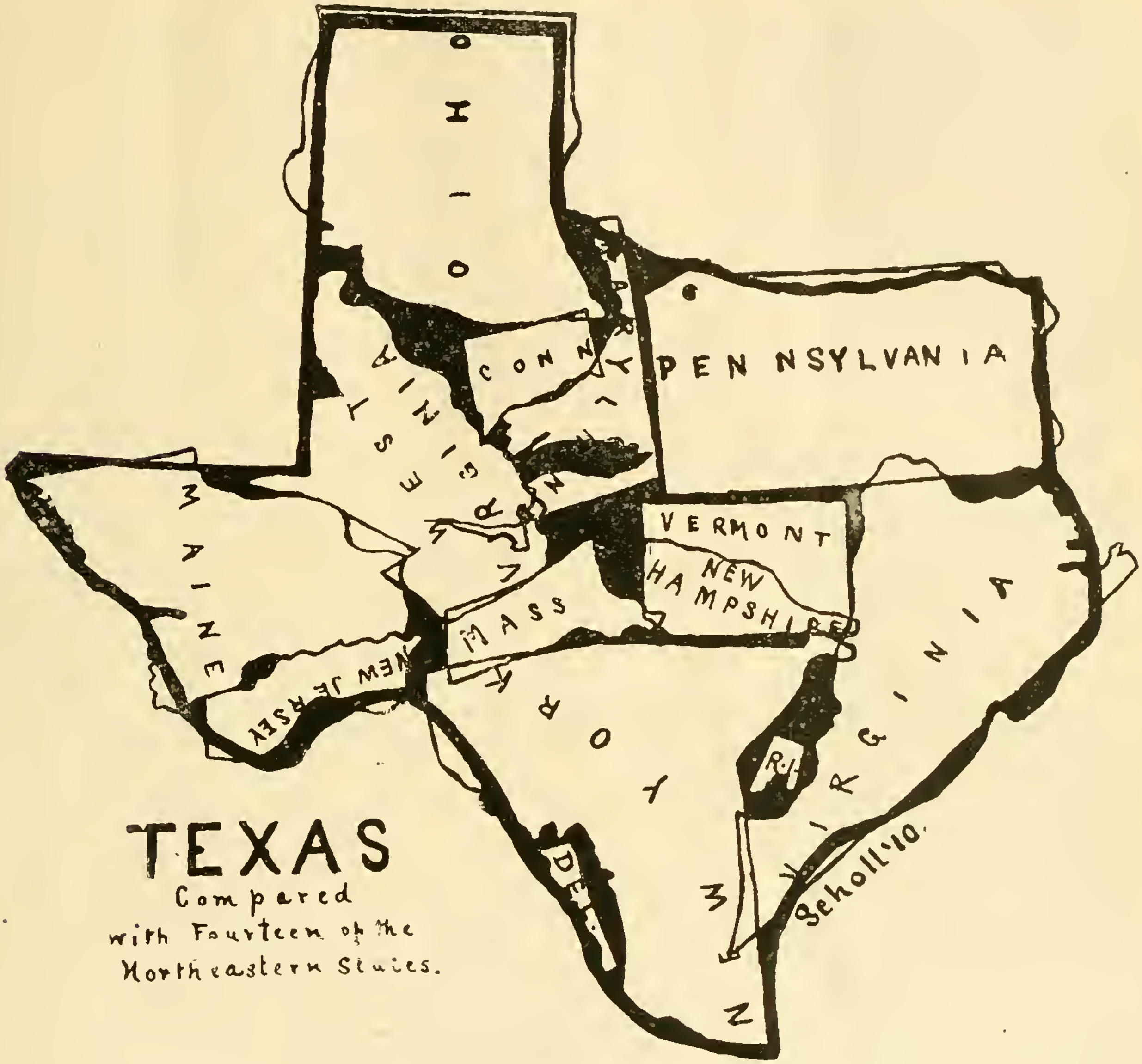
There has been a lack of interest among the Texas bee-keepers, to attend meetings or conventions, for where there were at one time eight organizations of bee-keepers in Texas there are only a few now. Field meetings are of inestimable value also, and these can be held at various times and places, without first permanently organizing the bee-keepers. However, it is better to organize and band the forces closely first. There should be a larger number of sectional or district bee-keepers' associations in the great Lone Star State. There is room for them. The great difference of conditions in the different parts of the state, make it essential to hold these local meetings. These should all become affiliated with the State Bee-Keepers' Association and thus strengthen the main Association of the State.

WORK OF THE STATE BEE-KEEPERS' ASSOCIATION.

The State Bee-Keepers' Association should devote its time looking after the industry, especially such matters as cannot well be taken up by the smaller organizations. In fact, all subjects of a state wide nature should come before the State Association. A mistake too often made at the state meetings is the discussion of the less important matters instead of paying attention to the important subjects that involve the bee-keepers of the entire state. Topics that can be easily learned out of the many books on bee-keeping should not be given the valuable time at the state meetings. It should be remembered that many bee-keepers are required to travel long distances to attend a state meeting, and that one can hardly afford to do so for the discussion of little, every day subjects. It has been argued that there are always some new bee-keepers present who do not know the "A B C's," like the older ones, and that it is for their benefit that such common subjects are discussed. But these beginners can obtain this information from the many books or journals at a much smaller expense.

SOME OF THE IMPORTANT SUBJECTS NEEDING ATTENTION.

Crop reports, better methods of marketing, and honey prices are all three of more importance than the average bee-keeper places upon them. In fact, so important are these that they should receive most of the attention at state meetings. The standard requirements for filling the various receptacles in use in Texas, with the proper amount of honey, should



In a State of such magnitude there is room for organization among bee-keepers, and the State Department of Agriculture has a great field in which to extend its work.

be given thought. It is but a matter of time when bee-keepers will have to pay more attention to this. There is at the present time a great variance in the manner of packing the regular sizes of honey packages adopted as standard sizes by the Texas bee-keepers. It has been a custom of many to pack short weight gallons, half gallons and quarts, as well as sixty pound cans, and sell them at so much per pound and charge for 12 pounds, 6 pounds, 3 pounds, and 60 pounds. There is also a great difference of opinion even among the best bee-keepers as to the proper proportion of comb and extracted honey in bulk comb honey. It is essential that the State Bee-keepers' Association go on record as demanding that all packages be packed according to a set standard. There should be uniformity in packing as well as grading. Then the price for it should be looked after. There is no reason why a short crop of honey should not bring the bee-keepers more than when there is a big crop. My observations are that there is hardly any difference, due, I believe, to the lack of proper attention on the part of bee-keepers. It is useless for any individual to try to accomplish these results if the bee-keepers of the state will not co-operate.

FAR WESTERN BEE-KEEPING

Conducted by WESLEY FOSTER, Boulder, Colo.

Some Hive Tools I Have Seen in Honey Shops and Apiaries

There is a dearth of handy hive tools. The supply manufacturers make a few useful ones, but there are not enough for the various uses for which a bee-man needs a special tool, and few of the manufactured tools I have seen are strong enough. Perhaps one reason is that the sale is too limited. It is easy for each bee-keeper to go to his blacksmith and have a few strong tools hammered out for a dollar.

Mr. W. B. Walcher, of Boulder, uses a handy hive and super scraping tool that is a joy to use. Figure 1 shows how it looks. A mower tooth is ground down until it is sharp on all three edges, and is a perfect triangle. A hole is bored in the center, and a half inch rod a foot long is either bolted or welded in. The other end of the rod is spread out to an inch and a quarter and sharpened for use, as a pry or hive tool. These three-cornered edges facilitate the scraping of supers, hives, and section holders—in fact, any corner with propolis in it can be easily cleaned out.

The next tool, No. 2, that a number of bee-men have appropriated, is a claw hammer with a steel handle spread apart at the other end, and sharpened for a scraper and nail puller. Such a hammer is fine for opening cases of honey or for use as a hive tool. This hammer is used by all fruit dealers, and is a staple in the hardware market.

But this little hammer is rather light, and some of our hurry-up bee-men have had their blacksmiths make them a heavy tool 1¾ inches wide made of a leaf from a carriage spring. One end is sharpened, with the edges square. At the other end, a blunt, round piece of steel is fastened as shown, to act as a crude hammer in case a nail or staple is to be driven. This is heavy enough to do almost any kind of prying.

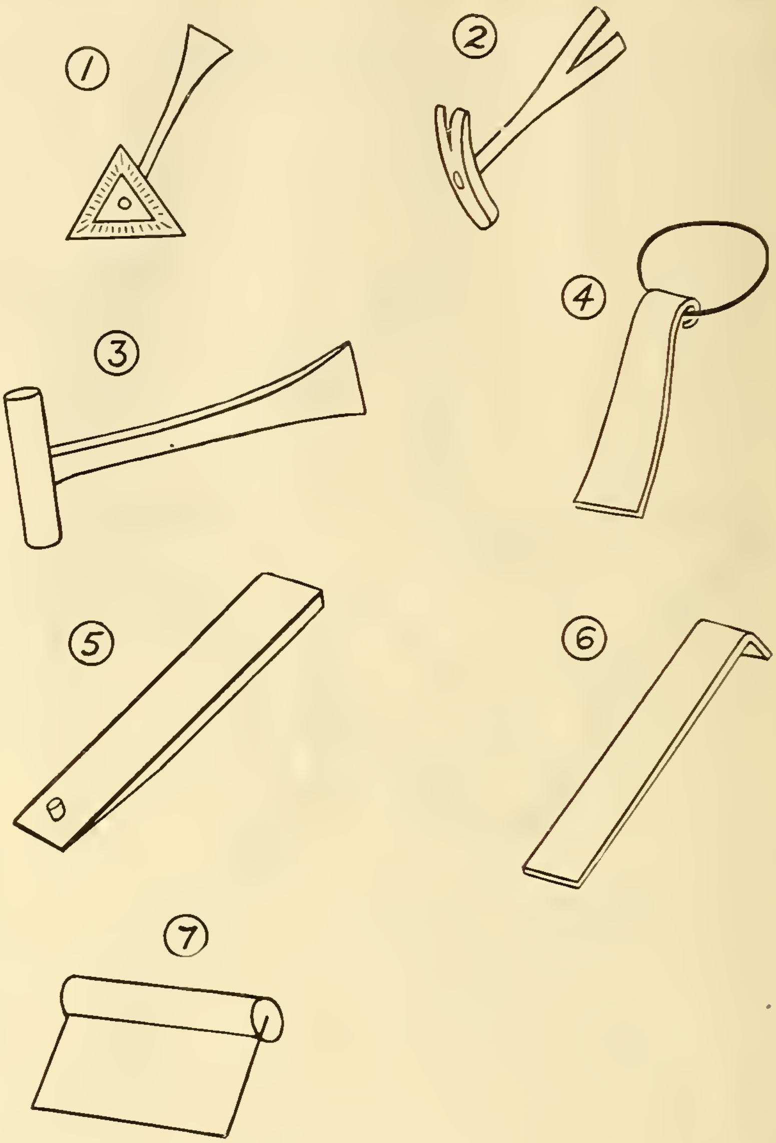
The tool shown in No. 4 is used by Mr. E. D. Nichols, of Montrose, Colo. It is about 7 inches long, but would be better if it were 9 or 10 inches long, and 1½ inches wide instead of an inch. The handle end is curled over, and a heavy string loop pulled through so that the tool will always be dangling from your wrist when going from one hive to another. The advantage of this tool is that you don't have to keep picking it up.

Figure 5 is just another leaf from a carriage spring straightened and sharpened with a small bolt inserted about 1½ inches from the sharpened end. This prevents the tool slipping into the hives too far when inserting between hives, supers, etc. It also protects the thumb and fingers from getting many a hard jolt if the super separates suddenly.

Number 6 is still another leaf of carriage spring sharpened at one end and curled over half way and sharpened also. This makes a fair scraper for covers, bottoms, etc.

Number 7 is a piece of saw blade cut 3½x5 inches, and sharpened square, like a regular wood scraper. The round wood handle is a piece of broom handle; a saw kerf is made for the insertion of the blade. A few nails are then driven through after drilling small holes through the blade. We like this tool very much for scraping wood separators and section holders. For some work it is better than the tool shown in Fig. 1, but I want one of each.

When a blacksmith understands just what you want, you will be surprised what a neat tool he can make if he is careful. Any of these tools can be made by a blacksmith except, perhaps, Fig. 2, and while you are at it have a half dozen made, and then you can have another handy when you lose one.



Some Different Hive Tools.

CANADIAN BEEDOM

Conducted by J. L. Byer, Mt. Joy, Ontario.

Confusion in Names

In a recent issue of Gleanings in Bee-Culture, Dr. Miller protests against the use of the word "honey" as applied when giving yields of apiaries, as it is a very indefinite term when nothing is said as to whether extracted or comb is mentioned. He also calls attention to the fact that a worse mix-up is made when the term "foul brood" is used, and nothing given to let one know which brand of the disease is meant. In connection with this last criticism, I emphatically agree with him, and I have been a "kicker" ever since the cumbersome term "European Foul Brood" was coined. It leads and will lead to endless confusion as long as the name is used, it would yet be a good thing to change to something that will not cause so many mistakes. Only a short time ago, so well known and practiced a writer as Mr. J. E. Crane, stated in Gleanings in Bee-Culture that he was surprised to see how differently "foul brood" acted in different localities, as in some locations it seemed more virulent than others, and spread much faster. I called his attention to the fact that in my experience, the old time "foul brood" was very much alike in all localities and its spreading all depended on whether there was robbing or mixing up of brood combs. Friend Crane replied that it was European foul brood he had in mind, and while this item is not to criticise friend Crane in anyway—for we all make mistakes—yet it shows how easily it is to cause a lot of misunderstanding by reason of a name being used that is not at all applicable in describing a disease; when the name is so nearly like another well known disease and yet widely different. "Black Brood" even if not the best name for this new pest, is much better than the name now used, and if our laws are not framed to cover diseases except when classified as "foul brood," the sooner they are amended, the better for all concerned.

Crop Conditions and Prospects

The crop of clover honey in Ontario will this year be above the average both in yield and in quality. While very little honey has been harvested in the eastern counties and but a slight yield as a rule in northern counties, the southwestern part of the Province has yielded so generously as to bring the yield above the average. The counties of Norfolk, Middlesex, Wentworth and Peel have given the heaviest yields. In our own county of York, the best yield in many years has been obtained. Prices are ruling about the same as last year, and as crops of grain are good in western provinces this year, there should be no trouble in disposing of all honey at a fair figure. Prospects for buckwheat were never better a few weeks ago, but at this date (Aug. 13) those prospects have nearly disappeared. For weeks we have had scarcely a drop of rain and all vegetation is drying. This year was a great clover year all over the province even in sections where it did not yield honey, but the next season bids fair to be the other extreme. Alsike is the main source of honey here, and at present, next year's acreage looks the smallest that we have had for many seasons. Basswood was a failure almost all over the province, as late frosts killed the buds in some sections while in others caterpillars stripped all the foliage from the trees.

Bees Stinging Black Objects

Periodically, the old discussion comes up as to whether bees sting black objects more than light colored ones. My own observations lead me to believe that the black is objectionable. An experience a short time ago strengthens my opinion. The minister of our church has about 25 colonies of bees near his barn. A few weeks ago he had his black and white spotted cow tethered about 40 feet from the bees. He has practiced this for some time and never a bee touched the cow, 'till one evening about 5 o'clock in the hight of the clover season, for some reason the bees attacked her and stung her badly. No one saw the start of the fracas, and nothing was known of the trouble 'till the cow in desperation broke loose her fastenings and came near the house. She was stung so badly that a veterinarian was called. She recovered after a few days. Nothing so remarkable in a cow getting stung, but the strange thing was that the black spots had five or six stings to one in the white spots. I think I heard our friend A. C. M. ask **how much** difference there was. While I cannot give a definite answer, still the difference was so great that all noticed the fact. The spots were all over the body of the cow, and yet the black spots were peppered full of stings while the white areas had but few. I do not attempt to explain the reason, but I have to believe what I see.

Direct Introduction of Qunens

This evening I introduced some queens, and by way of experimenting tried three on the direct plan as advised by A. C. Miller. I am not yet going to criticise the plan one way or another, but I do want to tell of a "fool trick" I did. I had let two go in all right, and was at the third hive with the cage in my hand, with finger over the end where the wirecloth had been removed for letting the queen run into the hive. I placed the end of the cage in the hive entrance but her majesty was slow in leaving, so I started to open the cage on the side. In some mysterious way, that queen got out of the cage so quickly that I never once saw her and I have not the slightest idea where she went. Perhaps she is off to one of the southern states where she came from, but more likely, she is a corpse in front of one of the hives in the yard. What did I do about it? Really words failed to give satisfaction, I simply murmured "fool trick No. ——." I have introduced queens in many ways, and this is the first time one has ever been lost in that way. So please notice friend A. C. Miller, that I lost at least one-third of the queens on my first attempt at your method.

BEE-KEEPING IN DIXIE

Conducted by J. J. Wilder, Cordele, Ga.

Some Great Opportunities

The writer is just back from his vacation, which he did not spend in the usual way, visiting progressive bee-keepers. Instead I explored the southeast portion of Georgia as a bee and honey country. This is perhaps the darkest spot in Dixie beedom. I have always been interested in this section as a bee country, for I believe it contained great opportunities for our industry. I was not at all disappointed. I had hurriedly passed through some of this section once or twice before and had received some very good reports from small bee-keepers scattered about.

In a conversation some years ago with Mr. T. W. Livingston, a well known bee-keeper at Leslie, Ga., he remarked that Mr. Harper of Tallahassee, Florida, who perhaps is best informed as to our honey flora, wrote him that he found in certain sections more honey plants and a greater variety of them than anywhere else in the south. After personal investigation I can substantiate this statement. I know of no greater opportunities anywhere, nor a better section to refer to bee-keepers. It is almost a web of railroads and borders on the Atlantic Ocean with four good ports; Savannah and Brunswick, Georgia, and Fernandina and Jacksonville, Florida. Thus the northern market can be easily reached by boats as well as by rail. The climate is very mild and general health as good as can be expected in any undeveloped country. There are many small progressive towns with schools and churches.

The honey produced in this section is all light in color and of excellent quality. The sources of surplus honey are ti-ti and huckleberry, gallberry, saw and cabbage palmetto, tupelo gum and white holly. Besides these well known honey-plants, there is a much longer list of minor ones yielding pollen the entire season. The first honey-plants yielding a surplus are ti-ti and huckleberry, which begin blooming about February 1; and the last one to bloom is cabbage palmetto, which goes out of bloom about the middle of July. These honey plants give about five months steady honey flow with but few intermissions. Any wide-awake hustling bee-keeper with a few hundred colonies of bees in several apiaries should harvest a good crop of honey during this time. The sluggard with only a handful of bees and high expectations would fall short.

There is one drawback to bee-keepers there and that is that winters are short and mild. There is considerable intervening time between the last honey flow in the summer and the first one in the spring. Much stores would be consumed and a close watch would have to be kept on the bees, unless abundant stores were left in the hives at the close of the harvest. There are a few colonies of bees scattered through this section. I examined them and found them "with the goods on them." Bee-keeping would be profitable there and the opportunities are so bright that I made arrangements to start up bee-keeping in one section where I could secure the services of a man who had experience with a few colonies and was enthusiastic over bee-culture. He at once subscribed for two bee-papers and purchased some bee-books, and is burning the "midnight oil" studying bee-culture and obtaining all the practical knowledge he can from his four or five colonies. He writes me that he doesn't know how he can wait until next year to enter bee-keeping as a vocation. He will have several hundred colonies in a number of apiaries and a good helper until he can take full charge.

◆

Apiary Work

In most sections in Dixie the main summer honey flow is over. In a few sections there will yet be a flow in the fall, while in many others the flow will be light and lingering so that brood rearing will be kept at a high pitch. Each individual bee-keeper knows something of these conditions, as they exist in his neighborhood. He should know whether he wishes to requeen or make some good increase.

If a surplus honey flow is expected, the necessary supers should be prepared and given to the bees when the honey plants begin blooming. If there is no more surplus honey expected, all supers and surplus honey should be removed and comb-honey supers left off for the winter. Extracting supers should be placed back on the hives so the bees can care for the combs until the next season. In removing honey, always inspect the brood-chamber or bottom-story and make sure that the bees have sufficient stores. Many times bees store nearly all their honey in the supers and are short in the brood-chamber. Such a shortage can be overcome by supplying honey either from other one-story hives or from full-depth supers. If increase is desired, it can best be made from the strongest colonies by dividing them into two equal parts. The queenless halves should be left on the old stand and the others containing queens put on new stands. Otherwise most of the bees would return to the old stand. The queenless part on the old stand will raise a nice young queen or you can buy queens and introduce them. Ripe queen-cells may be given from some of the best colonies made queenless nine days before for this purpose. If you desire to requeen all or a part of your colonies, make a few of your very best colonies queenless by removing and placing in an empty hive on another stand, the queen with about two frames of brood. In nine days these queenless colonies will have a number of ripe queen cells, which can be removed and placed in cell protectors. The undesirable queens may then be found and killed and a cell given each colony. As soon as all cells are removed from the colonies that built them, place a sheet of newspaper over the brood chamber and set the hive bodies containing the two combs and old queen on top of this. They will soon gnaw through this sheet of paper and peaceably unite.

DISEASES OF BEES.

The Foul Brood Situation

BY J. E. CRANE.

Some time since Mr. E. D. Townsend made the statement that if once you had foul brood you would always have it. I consider the statement very unfortunate, and if he had ever had any experience with brood diseases, I am sure he would never have made it. I know it is not true of American foul brood, as I have had it among my bees several times, and found I could, with care, rid myself of it. I once went 25 years without seeing any signs of its re-appearance. I have had no experience with European foul brood among my own bees, but from my experience as an inspector, I find it yields to treatment quite as readily as American. I think more so. But in the hands of shiftless bee-keepers it is likely to remain.

How can we get rid of it? I have heard a number of lectures on this subject. While great importance is laid on disinfecting the hives that have housed a diseased colony by burning them out with a torch; a strong solution of carbolic acid or boiling water not being sufficient, it is claimed, to kill the germs that cause the disease. I have heard very little of the importance of getting rid of Pat O'Flattery's 5 colonies, foul with disease, which he has very conveniently forgotten to list with his taxable property. He lives over the hill in the edge of the woods on a road rarely traveled.

And then there is the "Widder Brown," who lives on the back road, and has 2 colonies that "*set* out back of the barn by the hog pasture, so they *won't sting nobody*." The swarms, when she has any, go to the woods and she gets little honey. Her hives are of little use except as a nursery for disease to torment her more enterprising neighbors.

Now I am not denying that bacteria larvæ, or bacteria pluton, will not thrive on a strong solution of carbolic acid or an occasional bath of boiling water. What I do affirm is that the danger of not getting rid of these diseases by any intelligent, enterprising bee-keeper comes more largely from the inspector overlooking these small yards in out-of-the-way places, or the shiftless treatment of those he does find.

An inspector gets word from a town 30 miles away that there is undoubtedly foul brood in a certain yard. He takes the first train, reaches the place and "inspects." "Yes, sir, it is a bad case of foul brood." He gives directions how to treat it; goes to the hotel, gets a good dinner, after which he sits on the veranda, smokes a fragrant cigar, and takes the next train home, looking every inch "an official." Such "officials" are not worth their weight in salt.

It is quite as important that an inspector should look for more diseases if he finds one yard infected, as to look after that one. If he visits all the yards in the vicinity he will find how much territory the disease covers, whether one township or a part of several, or a whole county. When he knows how far it extends he can go to work systematically and crush it out.

But it is not an easy task for an inspector to find every bee-keeper in a given area. I remember in working in one town I thought I had every bee-keeper on my list, when by accident I stumbled across one of the largest bee-keepers in the town whom no one had told me of. Only the other day I was talking with a man sitting beside me on the train, and he told me of an apiary of which I had never heard in a town which I thought I had covered very thoroughly.

Stamping out disease here and there while it remains all about you is not of much use. "But how about the bee-trees? Are you going to look them all up?" No, it is not necessary. If we take care of the colonies in the various yards about town the "bee-trees" will not bother us long, for these bees will soon die and the moth worms will finish the job.

So I say, cheer up my friends, I do not believe it is necessary that we should always have foul brood with us; although if we have shiftless neighbors we may occasionally "have a touch of it." Stamping out the disease here and there while it abounds on every side, is a good deal like putting down a Mexican revolution. It doesn't stay down.

Speaking of the use of a torch to burn out brood-chambers to disinfect them, is no doubt effectual, but in practical work I have found it hardly necessary. I visited a yard of 100 colonies two years ago, and almost every one was diseased. As the owner was a hard working farmer and a very good bee-keeper, I did not want to make him any unnecessary trouble. I told him I did not think it necessary to burn out everything. The worst colony I found I told him to just shake out in the brood-chamber, and in four days shake again without any cleaning. He did

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so, and the disease has not reappeared in that hive. I went over the same yard again yesterday, and found only two hives with foul brood, which, I think, a pretty good showing considering there has been considerable disease in other yards in the neighborhood within a year.

My idea is that the inspector should make it as easy for those having the disease as possible. The more obstacles we place in the way, the more difficult to get the average bee-keeper to do anything. Suppose the disease reappears in two or three colonies for lack of burning out their hives. It is far easier to treat these again than to burn out all the hives.

Perhaps I am making more fuss over the burning out of brood-chambers than might seem necessary, but where bees are kept in large double-walled hives, and packed loosely with planer shavings, it is more of a task to remove the brood-chamber, get the bees out, and burn out and repack than the rest of the work. I have gotten rid of disease several times during the past 50 years without burning out a single brood-chamber. But some one will ask, "If you got rid of it, how did you come to have it so many times?" How? By buying bees or honey, or combs that contained the germs of disease.

Middlebury, Vt.

CONTRIBUTED ARTICLES

A New Feeder

BY A. F. BONNEY.

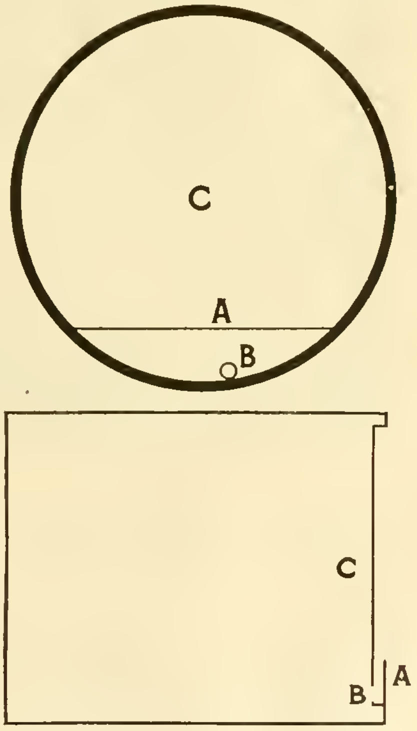
THE time was when if I got a bright idea I wanted to rush off and patent it, but after a few soul-harrowing experiences the fever abated, and I am now in not so much hurry to look for a fortune in an invention, particularly of an article of use to bee-men, so I give this new one to them.

I have never yet found a feeder entirely satisfactory to me. Cans of syrup inverted over the frames will warm up, the air will expand and force the syrup out over the bees; wooden feeders of all kinds will leak and flood the hives, wetting up the bees and starting robbing; entrance feeders are baits for robber bees, while the use of candy is troublesome, so much so that I have yet to meet a bee-man who has used it.

The writer formerly kept chickens, and used a waterer that he thought perfect, and it is still in use by thousands. It is based on the well-known law that a small column of water will balance a large one, and is made by making a cup of part of the cover of a friction-top pail, or fastening a cup onto any kind of a can with an opening from the can into the cup. The vessel is stood up and filled, then laid on its side when the syrup will run into the cup until it closes the opening in the can, when the flow ceases until air is let into the can by the bees taking up the syrup from the cup.

To adapt this to a bee-feeder, bore a hole in the cover of a friction-top pail or can. This must be ⅛ inch in diameter. To the rim of the cover solder a piece of tin 3 inches long and ⅜ inches wide, cut to fit the curve of the cover's rim. This will make a cup about ⅜ inches deep, 3-16 inches from front to back, and it will hold approximately two-tenths of an ounce of syrup.

As every one has several friction-top pails, quarts and gallons, such feeders, in small numbers, may be made very cheaply, while if new cans must be used they need not cost more than 10 cents each. As they lie on the side while in use, they may be covered with packing, the cup coming right over a hole in the super cover and protected with a piece of burlap.



THE FRICTION-TOP CAN MADE INTO A FEEDER.

It is needless to tell that such a feeder may be arranged for stimulative feeding, or by increasing the size of the hole to give a colony a very large quantity of syrup in a short time. The application of the principal to the bee-feeder is what I claim to have discovered.

Buck Grove, Iowa.

Feeding Bees

BY E. S. MILES.

ON page 114 for April, Mr. H. A. Wells criticises my advice, that "when you have fed your colony what you are quite sure is plenty, then feed it about 5 or 10 pounds more." I wish to call Mr. Wells' attention to the fact that I was discussing the feeding of colonies that were out, or nearly out, of stores, and not as his were, "Already had enough to have carried them through."

The difference is here: In feeding this sugar syrup to colonies destitute of stores, there is a large shrinkage between what the syrup weighs and what is left after the bees finish handling it and have it stored in their combs. This is why it is better to give 5 to 10 pounds *more* rather than just enough; for, in fact, it is impossible to tell just what is enough exactly for each colony. This shrinkage is variable, and the amount consumed by individual colonies also varies.

Mr. Wells fed "a lot of comb honey;" very little shrinkage here you see. He fed it to colonies he was afterwards quite sure had enough already, and in addition he fed it so late in winter that it crowded the queen for brood-rearing, whereas my March feeding gives two months, on an average (for this locality), that the bees will use much more than they can gather to good advantage for brood-rearing, if they have it.

If my article on feeding in the February number is read carefully, it will be seen I was talking of whether colonies could be saved by feeding sugar syrup in the cellar in winter. The question of the brood-nest becoming crowded later is another matter altogether, and one should not attempt to avoid that by having it light in fall or winter, at least in localities such as Iowa.

"Millions at our house" up until about fruit-bloom, is a good motto for "this locality." At fruit-bloom, if favorable, comes the question of more room or increase. With me, I *never* have the least bit of trouble in getting bees to move honey to make room for brood, where I put on built comb; in fact, they sometimes do more of it than I like.

I lost 3 colonies myself the past winter, simply because I failed to practice what I preached, and "feed them another 5 or 10 pounds." I figured they "had enough," and two were dead a few days before setting out of the cel-

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lar, while one was just falling off the combs when put out.

So I am trying to emphasize the fact that it pays, as a rule, to feed *plenty for winter*, when you *do* have to feed, to be safe, feed a "little more" than enough. I would be glad right now to pay $8.00 a hundred for 600 or 800 pounds of sugar, if it could be delivered to me already stored in those colonies I failed to feed "a little more." Then I shouldn't need to worry how long these cold, cloudy, windy days would continue.

No, friends, when you feed don't be afraid to feed "a little more." I am determined to follow that course more in the future.

Dunlap, Iowa.

Double-Walled Hives in Northern Idaho

BY F. F. GEORGE.

WHEN I arrived in Idaho 13 years ago there were two men here who kept bees, one in the Langstroth hive and one in the Jumbo. They wintered in the single-walled hives just two winters, then they had no bees. Another man ventured on the same plan, with the same success. Then I ventured with my former custom of colony cases. Having followed nursing one year, I believed bees needed nursing. The last-mentioned man gave me a free half-hour lecture on this not being a bee-country, while my bees had wintered perfectly, and I had cases of honey at home. The first two mentioned men started again, imitating me, and succeeded. One of my neighbors winters his bees in single-walled hives, with a varying number of 4 to 19 hives. He loses 50 percent, and never has any honey to sell.

My bees have a 4-inch wall of sawdust and chaff, mixed, on the sides, and 8 inches on top. Several correspondents, using single walls, told me their success would be better with double walls. I doubt if there is a locality from Alaska to Key West, Fla., where the double-walled hive would not produce an evener temperature, and give better results.

I have had a call from southern Idaho for bees. I think all bees there are wintered in single-walled hives. As has been written before, wild bees have better protection summer and winter than bees with a ⅞-inch painted wall. *Hives should never be painted*, but the outside case and roof should.

Bees should have double-walled hives summer and winter, but not necessarily packed in summer. The case then gives protection from wind and hot sun beating on the sides of hives. I am located in a canyon, narrow, and 200 feet below the plateau. I have never had the first indication of combs melting down. There is a cool draft nearly every night from the snow-capped Bitter Root Mountains.

Fraser, Idaho.

[The photograph of buckwheat on the front page was taken by Mr. George. Buckwheat is not one of Idaho's best crops, but it does well.—EDITOR.]

F. F. GEORGE'S COLONY HIVES WITH BUCKWHEAT FIELD IN THE BACKGROUND.

Selling Extracted Honey

BY G. A. BARBISCH.

I WISH to give the readers of the American Bee Journal my experience in selling extracted honey. After supplying the local market and selling as much as possible around home, I still had a few thousand pounds on hand. As I am a cripple, injured during an operation some years ago, I cannot walk, and only get around in a wheel chair, I worried considerably about selling the rest of my honey. Then an idea struck me, why not advertise? Knowing that the Germans are great honey consumers, I sent an advertisement to a German church paper, which I take.

In said advertisement I stated that I had choice white clover extracted honey to sell which I could guarantee to be absolutely pure, in 60-pound cans, at $6.30 per can, two or more cans at $6.00; freight not prepaid. I also stated I was a member of said church, and gave the name of our pastor as reference.

This advertisement had not been in the paper more than twice when orders for from one to two cans came pouring in from all sides; yes, from nearly every State of the Union. In a remarkably short time all my honey was sold, and orders still kept coming. Not wishing to disappoint those, especially the ones who sent money orders or checks, I bought more than 2000 pounds from a first-class bee-keeper.

The profit was small, but it added a large list to my number of customers. Yes, that $3.00 advertisement more than paid for itself in a very short time. There is a little trouble in corresponding and shipping, but when you receive a nice letter (and, by the way, I have a good many), telling how well pleased they are with the honey, you are well paid for all your trouble.

If we should be favored with a good crop this season, I do not have to worry how to dispose of my honey at a good price, as the majority of my customers wrote me saying, "We shall order more of that good honey another year."

In closing, I wish to say to those

who wish to establish a mail-order trade, do not exaggerate in your advertisement. Furnish only honey of the best quality, the best well-ripened honey, and remember, ill-flavored and unripe honey won't bring you any return orders. Put up your honey in the best possible shape, neatly labeled—only then will you be able to stand back of your product. Write a personal letter to your customer, telling him that if the honey does not give entire satisfaction you will send him back his money and take back the honey. If you do that, you will win his confidence, and if your bees gather a good crop of honey, you won't have to lie awake nights and worry about selling your honey at a decent price.

La Crescent, Minn.

Rearing Queens

BY G. M. DOOLITTLE.

I SEE by the June number of the American Bee Journal that Wesley Foster and his helper are having some trouble in rearing queens as given in "Scientific Queen-Rearing." And I also note that both Mr. Foster, and the Editor in his foot-note, speak of the plan as given in that book, as requiring that the queen is to be put "in the upper story over an excluding zinc." This is something entirely new to me, and something which I never did in all the years in which I have kept bees.

As I have written for publication since the book was in print, when very early queens are desired before the colonies are strong enough to profitably occupy an upper story, such can be reared to fairly good advantage by slipping down a queen excluding-zinc to one side of the hive, so as to enclose two combs of young brood and one of honey, the comb containing honey being next to the zinc.

When using a 10-frame hive this gives 7 frames on the side the queen is to be left in, and 3 frames where we expect to put the frame having the prepared cell-cups. The hive, after it is thus prepared, should be left 2 days, when, at the time we are about to get the little larva for transferring, we take out the frame of honey and spread the 2 frames of brood apart preparatory for the reception of the frame having the prepared cell-cups.

This is done so that the nurse-bees may be clustered between these two combs of brood when the prepared frame is put on, as the best of queens are only reared where there is an abundance of nurse-bees to care for them. Now, did we put on an upper story as did Mr. Foster, we should have so divided the colony that the bees would have seen that there was a need of retrenching rather than expanding, and anything that looks like poverty, famine, or the need of contracting the cluster from insufficient heat, makes the bees averse to the rearing of queens. If any are reared under such circumstances, they will be of a most inferior kind. Then by putting the queen above, as given in the June issue of the American Bee Journal, the most of the heat of the hive centers where the queen is, rather than where she is not, or where we wish to rear our *best* queens.

When any colony gets strong enough, or can be made thus by massing early maturing brood in it to occupy to overflowing two hives, then a queen excluding-zinc is put on top of such a hive, and over this zinc is placed another hive fitted as follows:

Next to one side of the hive is placed a division-board feeder, then three combs containing mostly eggs and small larvæ (this can be taken from other colonies), then three combs like the first three next to the feeder, and last an empty comb, thus completing the necessary 10-frame space. The two frames of eggs and young brood are to be taken from other colonies rather than disturb the hive below, and are used for the purpose of drawing many young nurse-bees right where they are wanted to feed the little transferred larvæ which are to be given two days later. If plenty of honey is coming in from the fields, no feeding need be done; but at any time and all times very little nectar is to be had, a good feed should be given in the feeder each night about sunset. This will keep the bees active, similar to what they are in swarming time, and this feeding should begin the night of the day *when the hive is prepared*, instead of waiting until the night after the cell-cups are put in.

Two days after preparing the hive, when you get the little larvæ for transferring, stop and take out one of the frames of honey from the prepared hive and spread the two frames of little larvæ and eggs apart for receiving the frame of cell-cups when you have them ready, so that the nurse-bees may be clustered between them, as given earlier in this article.

I see by what Mr. Foster writes that his Mr. Bird did his transferring of the tiny little larva outdoor in the sunshine in *April*. We do not try to rear queens here in the cold of central New York before June 10, and then, as well as at all other times when the mercury does not stand at 87 to 90 degrees in the shade, do this in our room (letting in the sunlight through a south window). Then if the mercury is less than 75 degrees in the shade, the frame having the prepared cell-cups is wrapped in a warm blanket when carrying it to the prepared colony, so that it goes to the bees at about the temperature necessary for successful brood-rearing.

I mistrust that most of the failures are due more largely to the matter of transferring the larva than elsewhere. I am constrained to give the fullest possible directions in this matter. To those who have not succeeded, I would say try the matter at swarming time, or on some colony that has been queenless long enough to have queen-cells nearly ready to seal over, those having plenty of royal jelly in them. After having removed the larvæ occupying these cells, transfer the larvæ from your selected breeding queen to the royal jelly left, just as you removed the original larvæ from it, then put them back in the swarming or queenless colony. If this is a success you may know that there is no trouble on your part in the transferring process; but should it not prove successful, you may rest assured that you killed the larvæ in some way in manipulating them. If you succeed here, try the same natural cells in the upper story of a tiered-up colony, and if I am not greatly mistaken you will succeed here also unless you try in early spring or late in the fall, at which time the bees are averse to rearing queens except in queenless colonies.

If you succeed with these cells having royal jelly in them, and cannot with the cell-cups, then you may know that there is some mistake in your manipulation of the royal jelly, or else the cell-cups are not fashioned in accordance with those built by the bees. But you should have no trouble with the cell-cups if you fit your forming stick in accordance with a naturally-built cell at the time you find an egg in it.

A few suggestions about transferring: Make the point of the quill, or whatever you use, very thin and quite broad; then give the point enough curve so it will fit the bottom of the cells nicely. Now before trying to transfer the first larvæ, dip the point in royal jelly until it is thoroughly moistened with the same, when you will note that, as you pass it under the larvæ, said larvæ will float upon this jelly so it does not touch the transferring instrument at all, and it cannot be injured if you use any care in setting it down in the royal jelly you have previously placed in the cell-cups.

If you are bothered about seeing, shave the piece of comb containing the larvæ down close to the base of the cells. No one who can read the print on these pages should have difficulty in seeing perfectly.

And now (any one who should happen to fail in using the plan as given in "Scientific Queen-Rearing") don't think hard things of Doolittle, for I have no more interest in that book than I have in any other bee-books except that it is my "baby." I let the manuscript for the book go for less price than I get for this article, giving the whole thing to the world free, and sent out the matter with the only wish that it might bless the bee-keepers of the world, hundreds, if not thousands, of whom are being blessed in accordance with the multitude of testimonials which have been given during the past nearly a quarter of a century.

Borodino, N. Y.

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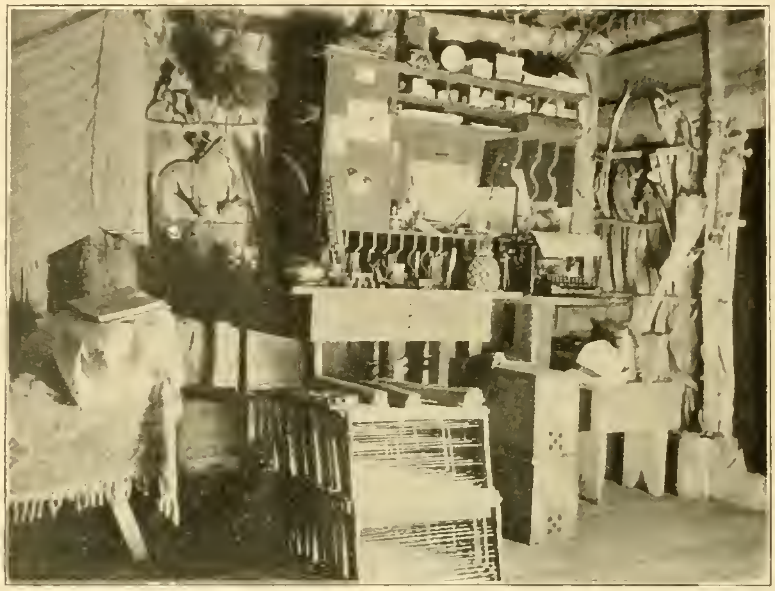

Office, Kitchen, Bedroom, Parlor,, Etc., of a Bachelor Cuban Bee-Keeper.

Putting in a Batch of Queen-Cells—Mrs. T. R. Towns Officiating.

Conditions in Cuba

BY D. W. MILLAR.

FROM the accompanying photograph you can see that all the queens in Cuba do not live in bee-hives. This puzzle picture (pick out the two Americanos) was taken near Finca Mayabe, near Holguinin Oriente Province, where I am locating a new apiary with 250 nuclei, and where I will rear all my queens in the future on account of the exceptional advantages the neighborhood affords.

The location is in a very fertile valley about 25 miles in length, extending to Nipe Bay, and of which there is always an abundance of natural flora. In addition to this my bees will have the 100 acres of orange and grape-fruit groves and nursery of Mr. T. R. Towns, one of the successful Americans in Cuba, to work on. It is because of his knowledge of the business, understanding soils, conditions and natural advantages in Cuba, Mr. Towns is able to produce ripe fruit for shipment every day in the year, and sells most of it direct to the consumer in one-box lots and up, bunching shipments regularly to his New York agent for local distribution. The tangerine and King oranges are sold here on the trees one year in advance, and average from $5 to $10 per tree; 100 trees to the acre. Mr. Towns raises all kinds of tropical fruit and foliage plants, also hogs, mules, and other live stock.

Within a few miles of me is the Chapara sugar mill, the largest in the world. I am told this company will grind over 1,000,000 bags of sugar in Cuba this year. Some dulcet, hey! There is also another very large mill at Preston, near Nipe Bay. Its capacity is 400,000 bags. A bag is 325 pounds; market value, $10.

Where hauling is necessary oxen are still the best in the country districts, and will be until we get some roads. Our railroads are as good as could be expected, and our shipping facilities from seaboard to all the outside world are unequaled.

A very large acreage of fruit groves has been planted in Cuba, and much of it is in good bee-locations still unoccupied; but as most of the growers follow their government reports and the experiments made by fruit-men in other countries, they appreciate the necessity of bees for the better pollination of their bees, and many who do not care for the profit are placing a few colonies in their groves for the good they will do alone; but those who do not care to go to the bother and expense of this are very willing that others should. Therefore, good locations can easily be secured.

Our little country is a very good one for many things besides bees. It is very rich, but just at present very poor in money, just having undergone a very thorough picking and cleaning by the retiring political party, but everthing that was too big to carry is still here, and we now have a very able and good President, and should enjoy a period of very exceptional prosperity.

Holguin, Cuba.

Some Things About Cellar-Wintering

BY DR. C. C. MILLER.

(*Continued from August number.*)

CELLAR VENTILATION.

WIDELY varying opinions have been held as to the importance of ventilation for bees in cellar, and the amount of ventilation needed by them. Some claim they cannot have too much ventilation, provided there is no draft; some have claimed that they might be hermetically sealed without detriment. The latter might be true provided they could be kept constantly at that point of temperature where they are practically dormant. But has that ever

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Puzzle—Pick Out the Two Americanos.

been accomplished, and is it likely that it ever will be accomplished?

I think Dr. Zander tells us that at a temperature of 68 degrees, a bee, in proportion to its weight, needs some 70 times as much air as a man. It may never be so warm as that in a bee-cellar, but it is reasonable to believe that a creature which needs such enormous quantities of air at 68 degrees must need a good deal long before it reaches that temperature. At any rate, no one has probably claimed that harm could occur from too much air provided there was no draft.

Views differ greatly as to the best way to ventilate a hive in cellar. Some think it best to have sealed covers with ventilation only below; others prefer more or less upward ventilation. In my first wintering, with box-hives, following Quinby, I turned the hives upside down, thus leaving the bottom hermetically sealed, and the top wide open. Later, with movable-comb hives, there was an entrance of ½-inch at the bottom with a ¼-inch crack at the top. At present, and for years, I have had bottom-boards 2 inches deep, and the entrance 2 inches deep left wide open in the cellar, and the covers sealed shut by the bees. I doubt if it makes a material difference how the ventilation is given, only so there is enough of it. I doubt whether too much can be given.

But no matter how the hive is ventilated, it avails little if there is no good air outside the hive in the cellar. With sufficient doors and windows there ought to be little trouble about ventilating a cellar if it were not that in introducing fresh air one is likely to introduce too much cold. If one could hold the cellar at that temperature at which bees are almost entirely dormant, it would matter little about the ventilation, but, alas! that "if." When the outdoor air is too cold for the bees' welfare, the remedy is to raise the temperature in some way by artificial heat in the cellar. Formerly I kept a fire in a stove in the cellar whenever it was cold enough.

When I had a furnace put in the cellar, in 1902, the matter was simplified. Instead of gauging the heat in the cellar, I now have to gauge the amount of air admitted to make the cellar cool enough. In most winters the outside door is more or less open almost all of the time. When it is cold enough to have the door closed, then the great difference in temperature between the outside and inside air makes enough ventilation through the walls and cracks of the cellar. If a warm spell comes, as sometimes happens in the middle of winter, or when the weather becomes mild in spring, then I open window and doors to their widest at night. The first time I did that—long before the furnace was in the cellar—I had a good fright. The bees, which had been quite noisy before the cellar was opened, now became several times worse. They made a great uproar, running all over the hives and hanging out in great numbers. It looked a good deal like a general wreck. But the bees did not jump off the hives upon the ground, and by morning they were very quiet. Indeed, on some occasions of the same kind afterward, I found the bees so quiet in the morning that the light could shine directly into the entrances without harm, and the window could be left open half the forenoon without the bees flying out.

LIGHT IN BEE-CELLAR.

It is perhaps generally understood that a cellar should be kept dark if bees are to winter in it successfully. Certainly darkness is very important at times. In a warm, muggy spell toward spring, with the temperature both in the cellar and outdoors up to 50 or higher, if light be admitted in the middle of the day, thousands upon thousands of bees will leave the hives and make for the light, never to return. If the cellar be kept dark, many bees may leave the hives and struggle out their lives upon the cellar-bottom, but there will be no such wholesale exodus as if the cellar is at all light. So at such a time absolute darkness is at first requisite.

But at other times darkness is not absolutely necessary. Indeed, at the risk of being considered somewhat slack in orthodoxy, I may say that I am growing to lean somewhat toward the belief that it is better to have more or less light in the cellar the greater part of the time. Those who make a business of telling us what is best for the health of the human family, lay great stress on the healthful influence of plenty of light in our dwellings. We all know that an outdoor life is the healthy life, and in the outdoor life the light as well as the air plays an important part. If light be good for the human family, why not for the bees?

What harm does light do in a bee-cellar, anyhow? Just one thing; it allows the bees to fly out of the hives. That's all. If light can enter without making the bees fly out, then let in the light. And light does not make bees always fly out of the hives, by any means. Suppose some day toward the last of November half the bees of an apiary are taken into the cellar and the other half left on the summer stands. The chances are, nine out of ten, that the cellar will at once be darkened, and kept dark until the bees are brought out in spring. Then suppose, the day after the bees are taken in, the outdoor temperature stands at 40 degrees or less. The light shines full upon the hives outdoors, but the bees have no thought of flying out. Why should they fly out any more than the bees on the summer stands? As a matter of fact they don't. At least mine don't; and at such times they are allowed all the light that will enter through open doors.

As an illustration: March 9, at 9 a.m., the sun was shining brightly, and the doors were open, but window closed. Standing at the pile nearest the door from the furnace-room to the bee-room, which was about 7 feet from the door (the backs of the hives were toward the door), I could read with ease common newspaper print. Standing at a pile on the farther side from the door, and about 12 feet from it, I could read the same print, but with difficulty. The hives of this pile directly faced the door, but no bees came out. It will be noted that this was well along in the spring, when bees will not stand as much light as they will earlier in the winter. But the air in the cellar was fine, there having been quite a wind, with doors wide open. The temperature outdoors was 40 degrees, and in the cellar about 45; to be exact, it was 43 degrees at the bottom of a central pile, and 48 on the top.

From a good deal of observaton I feel safe in saying that when other conditions are all right, light in the cellar can do only good and not harm. Only when other conditions are bad

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the cellar must be kept dark to keep the bees in the hive. Ordinarily a few bees will be flying out, even if only a little light be admitted, and their number is likely to be over-estimated. One day in the last of March I was told, "The cellar door is open and the bees are coming out in a stream." I stood inside the cellar, watch in hand, and counted the bees that flew out. In 5 minutes there were 14. But it looked a good deal more than that just outside the outer door, for they stayed circling about and made quite a show.

I thought it worth while to do a little figuring. I swept out the cellar 4 days after it had been previously swept, and swept up 9 pounds of dead bees. That made 2¼ pounds a day. I weighed ½ ounce of dead bees, and there were 151. At that rate there were 4832 in a pound. So 10872 bees had died in each 24 hours of that 4 days. At the rate of 14 bees every 5 minutes, if they flew continuously for 24 hours, just 4032 would be lost in that time. So there were more than 2½ times as many bees dying off all the time as were seen to fly out of the open door. That hardly looks as if the open door did much harm, even if the bees were flying out at the rate of 14 every 5 minutes.

Another thing worth mentioning is that moldy combs in my cellar are a thing unknown of late years, and that is due in part at least to the fact that the cellar is not kept constantly dark.

HUMIDITY IN BEE-CELLAR.

I never measured the humidity in my cellar, but I know that bees are more inclined to be uneasy in damp weather than dry. I know also that the cellar is much drier since a furnace is in it. Formerly, when the cellar was damp I practiced to a small extent putting in lime to dry it out. I suppose it did some good, but I cannot say how much. I have noticed that when the cellar was damp—before the furnace days—and the weather was muggy, the bees were more sensitive to light than when everything was dry. And so far as my observation goes, I believe the popular opinion is correct, that bees will stand much more cold in a dry than in a moist atmosphere.

MORTALITY IN BEE-CELLAR.

A certain number of bees die in winter, whether outdoors or in cellar. There is some danger that a mistake may be made as to the mortality in cellar. In one cellar scarcely any bees are to be found on the cellar floor; in another, with an equal number of colonies, three times as many dead bees may be swept up. But it is possible that the mortality may be less in the latter case than in the former, for in the first case all the dead bees have remained in the hive on the bottom-board, while in the other case they are on the cellar-floor. It is no doubt better to have them on the cellar bottom than on the bottom-board.

Deep bottom-boards — mine are 2 inches deep—besides being favorable to ventilation, give a much better chance to clean out the dead bees in the cellar. There is no danger that the entrance will be clogged, and if dead bees accumulate on the bottom-board it is easy to clean them out, provided the bees do not cluster down in the way, and in that case the bees are likely to keep the bottom-board clean.

The beginner need not be frightened to find many bees dying in winter, the number gradually increasing and becoming greatest just before time for taking out in spring. It may be useful to give the mortality in my cellar in the winter of 1912-13.

The bees, 93 colonies, were cellared Nov. 25. The dead bees on the floor of the cellar were swept up for the first time Feb. 14, after a confinement of 81 days. The second sweeping was March 12, after another confinement of 26 days. After another 16 days, March 28, the cellar was swept the third time. The fourth time was after another 4 days, April 4. Then the remaining dead bees were swept up after the bees were taken out of the cellar, April 5. It would not be fair to charge up to the last 4 days' confinement all the bees that were swept up after the taking out, for there would, of course, be some between and under the hives, that had accumulated through the winter. Also, it should be mentioned, these extra bees would make the mortality throughout the winter at least a little more than shown by my figures at the first 4 sweepings.

The number of pounds of dead bees swept up were: After the first 81 days, 14; after the next 26 days, 18¾; after the next 16 days, 18½; after the next 4 days, 9; after the bees were taken out, 26. Counting 4832 dead bees to the pound, the average number of bees that died *daily, in each colony*, figures up as follows:

In the	1st	period	8.98 bees
"	2d	"	36.47 "
"	3d	"	60.07 "
"	4th	"	116.90 "

The average total loss for each colony for the entire 131 days was 4455, or a daily average of 34 bees. A deduction, however, should be made from this for the amount of dirt swept up with the bees from the earth floor. But this may be more than balanced by the dead bees not swept up, but carried out in the hives.

SOME GENERAL OBSERVATIONS ABOUT CELLAR WINTERING.

I don't know just how much better one kind of bees will stand confinement than another, but it is generally understood that in shipping queens by mail the escort should be of comparatively young bees. At any rate, young bees should not die off so fast as old ones; so my guess would be that for best success in wintering in cellar, as well as outdoors, it is well to encourage late breeding, so that there shall be a large force of bees that are young. Yet breeding should not be so late that any bees shall not have had a flight before their winter confinement.

For winter stores in cellar, I would rather have a good quality of honey than sugar or anything else. Yet it would trouble me to give any proof for the correctness of this preference. Honey contains elements not in sugar, and if I were allowed to guess, I should say that these other elements were important in winter as well as in summer. Nor is this view disproved by the exceptional cases of bad honey or honeydew, when of course it is wise to replace it with sugar.

One advantage of a 2-inch space under bottom-bars in cellar is the opportunity it gives for feeding. Even if a hive is in the bottom of a pile, it is easy to shove in a sealed frame of honey, a section, or a cake of candy. If necessary, the comb can be wedged up so as to touch the bottom-bars.

A strong argument in favor of cellar-wintering is the saving in stores consumed. That argument loses much of its force when a furnace is in the cellar and the temperature stands a good deal of the time at 50 degrees. But when I see the bees come out in spring as bright as in the middle of summer, with no dampness or mold on the combs, I am quite reconciled to the increased consumption. With better management and proper arrangements, it might be feasible with a furnace to keep the temperature down to that point where consumption would be least.

I once reported bees quiet at 60 degrees. I'm just a little suspicious that at that time the thermometer may have registered several degrees too high. And yet, after a gale sweeping through the cellar all night, with sweet air all through the hives as well as in the cellar, a temperature of 60 degrees might be reached without stirring the bees into activity. But that possibility might not materialize.

Anticipation

BY L. L. ANDREWS.

At first thought one might well say, "What a subject for a bee-keeping article." But the more I think over the idea, the more I am convinced that it holds the greatest key to successful bee-keeping. More especially is this so when we practice what our late bee-master, Mr. Hutchinson, always advocated, "Keep more bees."

There are two lines of work I have found that will urge a man beyond all others in working early and late, and many times on Sunday, too. One is bee-keeping; the other, seeking for gold hidden in the bosom of Mother Earth. When man is removing the pay dirt little by little, and it passes over the riffles or through the sluice box, that separates the shining gold from the gravel, dirt, and other materials that go to make up this world of

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ours, no one who has not experienced it can know how entrancing it is. And how even a lazy man will work, always urged on by the thought, "More work more gold," and "I'll strike it rich yet."

And what can you say of a good honey-flow, when every flower blooms to perfection, each one filled with that sweet secretion of nectar inviting the bees to come and work, even unto death, often in a few short days or weeks; that is the time when the bee-keeper gets busy, all day and half the night, nailing hives, wiring frames, setting foundation, with perhaps the wife and children (if he is fortunate enough to have them)? All are busy, and perhaps this is not enough. He sends a rush order for supplies; wants them right away; bees swarming; no room.

A supply man told me he had received an order for supplies, and also a letter asking why his goods had not been shipped the same day. Talk of anticipation; any one can anticipate that way. If you are in the business, 10 colonies or 1000, it makes no difference. What are you going to run them for, comb honey, extracted, or increase? It makes no difference, you will need supplies, and you cannot get them, much less prepare them for the bees in a day. During the winter and spring months we have many spare hours, when this work can be very profitably done. Suppose you are "tight" enough (we call it tight out here in the West, and it is a very fitting word many times), so that the interest is calculated on the investment?

Many supply dealers give a liberal discount on early orders. But suppose we figure in this way: A colony becomes crowded for room, gets out of normal, and prepares to swarm. Perhaps it was a young queen which, if given plenty of room, would not have tried to swarm that season. It was good for say six, eight or ten dollars if you had been ready with supplies. Another one swarms. With everything ready any one will hive it, often saving a colony that would otherwise have been lost. I find short, heavy honey-flows are the rule rather than the long drawn out steady ones, and when honey comes in with a rush that way, if you have anticipated, and have everything in readiness to put plenty of surplus room on every colony, one day will sometimes make enough difference to pay all the interest, to say nothing of the annoyance and over-time work by not having everything ready.

Of course we who produce honey by the carload must figure a little differently from the farmer with a dozen hives. But we expect to put on plenty of help during the busy season, and devote all our time to the business. I sometimes think the small bee-keeper loses more proportionately per colony than we who make honey production our business, by not anticipating the needs of his bees beforehand.

"Procrastination is the thief of time," says an old proverb. Overcome it by anticipating. Better by far have a few too many supplies on hand than to be short when you need them. "Time and tide wait for no man." Neither do big, strong colonies of bees. When the honey-flow comes, they are going to do something besides lie idle in a hot, close, thickly-populated hive. And the chances are, ten to one, they will anticipate a tree in the woods if you have not anticipated plenty of room for them in the hive.

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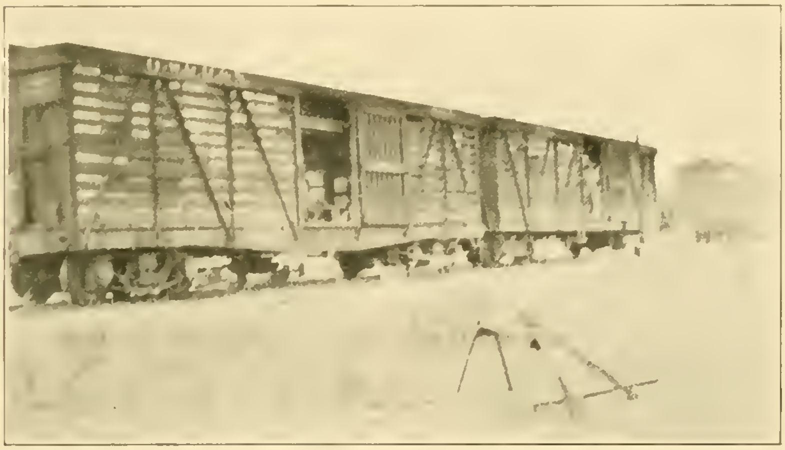

All Loaded and Ready to Go to the Sweet Clover and Alfalfa Fields of Utah.—L. L. Andrews.

DR. MILLER'S ANSWERS

Send Questions either to the office of the American Bee Journal or direct to
Dr. C. C. Miller, Marengo, Ill.
He does NOT answer bee-keeping questions by mail.

Prevent Increase—When Do Virgins Begin to Lay?

1. What is the best plan of management where no increase is desired?

2. How long after the prime swarm issues before the first virgin will begin laying? Wisconsin.

Answers—1. What's best for one may not be best for another, but one good way is to run for extracted honey and then follow the Demaree plan of preventing swarming. The plan is: As soon as there is danger of swarming, or about the time when the first natural swarms begin to issue, put all the combs of the colony in a hive-body, except one. That one you will leave in the old hive, and it may be one with the least brood.

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Even if it has no brood, merely honey and pollen, it will do. You will fill up the old hive with drawn combs or frames filled with foundation, and you will also put one of these in the vacant space left in the hive-body. Now put the queen in the old hive, place an excluder over the hive, and the hive-body with brood-combs over the excluder. The bees will not swarm, but will turn those combs of brood into extracting combs.

2. About 17 days, more or less.

Uniting—Transferring

1. I have 8 colonies in box hives. This winter I am going to buy modern frame hives, into which I wish to transfer my bees. As three colonies are weak I wish to kill these and get all the honey they have. You say a strong colony will winter better than a weak one. If that is so, would it pay to unite those three with some others, and when they have united put a bee-escape between them, and when they have all gone down take the top off and get the honey and render the old combs into wax?

2. Will the following plan work well for transferring? Say, I have five colonies in box hives and wish to transfer and I go to a hive to be transferred and smoke and drum out all of the bees into the frame hive except some to care for the brood that is in the hive at this time, which we suppose is in May or June; after which I set the old hive for, say, five days with its entrance closed over the frame hive and with a wire cloth between. After five days I replace the wire cloth with a queen excluder, which I let stay for fifteen days, or one day before all the brood is hatched, then I put on an escape-board in its place; and when they have all gone down, take the old hive off, save all the good combs and melt the others.

3. Do you think that a company can afford to sell a good two-story hive fitted with two comb-honey supers and one brood-chamber for $2.00 in flat? NORTH CAROLINA.

ANSWERS—1. Yes, that will work all right, only you must look out, when you give the excluder, that the queen is below it. To make sure about it, you can drum all the bees out of the upper hive, dump them down at the entrance, and then set your upper hive over the excluder.

2. Yes, only it is hardly necessary to leave the wirecloth as long as 5 days. Likely 2 days would be long enough—just long enough for the queen to get started laying below. Indeed it might work all right to give the excluder at the start, and the less time the wirecloth is left the better it will be for the brood above it.

3. I don't know much about the cost of such things, but they are not likely to offer what they cannot afford, although sometimes quality suffers for the sake of making a low price.

Shock or Brush Swarming—After-Swarms

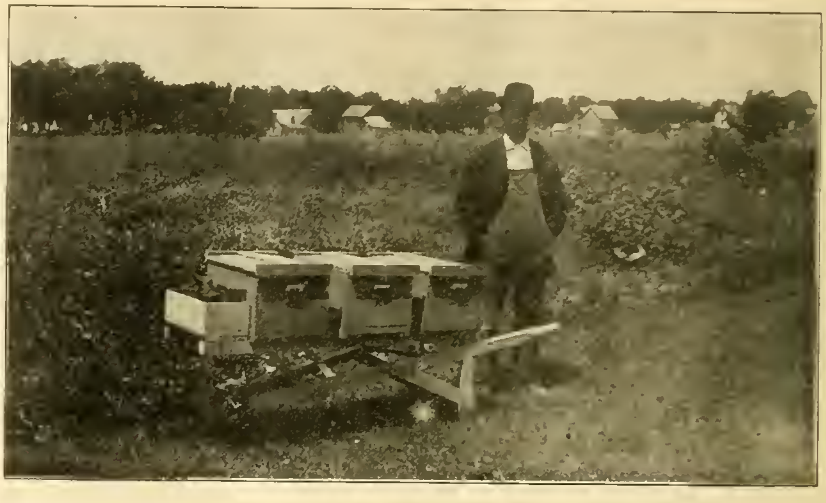
From what some contend "all" one should go by, is the symptom culminating in the presence of capped queen-cells. Within two weeks, I had about six of such colonies. It was just after apple bloom and before white clover, albeit that there were lots of dandelion. Aside from this the weather was cold and rainy and bees much confined, so that with every spell of sunshine the bees from most every colony were very lively. It seemed to me better to destroy the queen cells and avoid a further crop before shaking and brushing. What is your attitude: shake, especially when there are several queen cells or destroy and put off until very closeness of actual honey-flow?

2. When there is more than one queen cell in a colony will there be further swarming? When will the first queen destroy the other cells?

PENNSYLVANIA.

ANSWERS—Shake-swarming has been well called anticipated swarming, and is practised not because we want the bees to swarm, but because, if the bees are determined to swarm, we want "to beat them to it," if you will allow the slang. So it really comes to the question whether the bees will swarm if we don't anticipate them. And that will lead you pretty clearly to the ground you now occupy. It is true that the starting of queen-cells is proof that the bees contemplate swarming, but it is also true that bees are not infalible in their judgment about its being best for them to swarm, and sometimes they give up the notion of swarming and tear down the cells. At other times they go on and swarm when it would be better for them if they didn't. Flow or no flow (although generally bees will not swarm without a flow) it often happens that if you destroy the cells started they will not start others for some time, indeed sometimes not again that season. So if you find cells and think it not yet time for swarming, destroy them. Ten days later, if you find only eggs or very young larvae in cells, you may destroy again, if you think it too early to shake. But if, ten days after your destroying cells you find cells well advanced, nearly ready to seal, then you must shake if you want to head off swarming.

2. When a colony sends out a prime swarm there will always be found in the hive a number of queen-cells, half a dozen, a dozen, or more. If I am correct, your question is: When will afterswarming follow, and when will there be none? Of course in the former case the workers stand guard over the queen-cells, protecting them from the first emerged virgin, while in the latter case she is allowed to destroy the cells. It looks as if the matter of afterswarms or no afterswarms was always left open until after the issuing of the prime swarm, and indeed until after the emergence of the first virgin. Then it seems to depend on whether the bees think they can afford to swarm or not. If there is a good flow of honey there seems little risk, and one or more afterswarms will be likely to issue. Possibly the strength of the colony may have something to do with it, at least with the first afterswarm, for sometimes they seem to get reckless with later swarms, sending out only a handful of bees, and leaving the mother colony weak. There is no way for the bee-keeper to tell by looking in the hive whether the bees intend to send out afterswarms or not, unless it be at the very last, when he may see the oldest virgin digging open the cells to destroy the inmates, or may see the workers protecting the cells from the virgin. But the bee-keeper has it in his power to make the bees decide against sending out any afterswarms, in a way often mentioned in this journal. When the prime swarm issues he hives it and sets it on the old stand, placing the mother colony close beside it. Then in about a week he moves the old hive to a new place 10 feet or more distant. That's all; and he may feel quite sure there will be no afterswarms. The philosophy of it is easy. The first afterswarm issues about 8 days after the prime swarm. If, just before this time, the old hive be moved some distance away, it will be depleted of all its field-bees; for when these field-bees go to the field they take no note of any change, and when they return, instead of looking up the hives from which they went, they return straight to the old *place*, and join the swarm. Thus it happens that no honey will be coming into the old hive at about the time the first virgin emerges, and the bees feeling that a dearth is upon them will permit the destruction of all the occupants of the remaining queen-cells.



ED SWENSON, OF SPRING VALLEY, MINN., AND A HIVE BARROW OF HIS OWN INVENTION.

What Grade of Foundation to Use

I am going to have to buy foundation for 1500 Hoffman frames for the next season and do not know whether to buy medium or light brood. I have used both and can see but little if any difference in results. I have had no trouble with light brood sagging. I wire my frames but do not use splints. Which do you think is the better to use? OHIO.

ANSWER. It's merely a question of which

LEWIS BEEWARE MEANS GOOD QUALITY, SCIENTIFIC WORKMANSHIP CAREFUL PACKING EFFICIENT SERVICE Send for Annual Catalog which will tell you who is your nearest Distributer. G. B. Lewis Company, Watertown, Wis.

will succeed best, and as you have no trouble with the lighter foundation sagging it will be economy to use that.

Don't hesitate to send all the questions you like.

Ventilation—Swarming—Prevention

1. I feel at times perplexed about ventilation. Most of my hives have bottom boards with removable blocks in back, so that when the latter are removed, there is a clear sweep of breeze; entrance being of same size as gap at back. Towards winter, the bees propolize the back block airtight. Yesterday was a hot sultry day, evidently the bees appreciated the ventilation. About 10:00 p. m. there was a cool mild breeze from the northwest. It seemed to me a good idea to close up the rear of hives, as many of the hives face south. The north wind could enter the back. I attended to this before going to bed and while doing this a number of the bives had bees clustered thickly outside at the entrance and up the front. Why do you suppose the bees did this, when the heat of the day let up by 6:00 p. m.? Were they escaping the mild north wind or protecting the brood by almost closing the entrance?

2. Please give an opinion of the following for discouraging swarming: With regular examinations of all of one's colonies always take away *entirely* every frame with a queen cell, using such frame elsewhere and substituting, should this be rather depleting, with a new frame with full foundation?

PENNSYLVANIA.

ANSWERS 1. Your ideas of ventilation seem to be right enough, but you don't know how to carry them out. Neither do I. The ideal thing is to change the ventilation as often as the weather changes, even if that be several times a day. Plainly, such a thing is impracticable. I don't know of any better way to approximate it than to go somewhat by continued spells of weather. Of course through the summer season hives should be more open than in winter. When a hot spell comes that is likely to continue for several days, then it is well to open up as much as possible. If a cool spell comes, then close up. The part that you don't know, and I don't know, is what the weather will be within the next few days. If we open up for a hot spell, it may be cool and vice versa. The only advice I have to give is to lean toward too much rather than too little ventilation.

Regarding that colony that closed the entrance by clustering there when it became cooler, I don't at all think they did that to keep the brood warm. It was the same reason as always; it was too warm inside; and I don't suppose they felt like thanking you any for closing it up.

2. If you mean to substitute a frame filled with foundation for each frame found with one or more queen-cells on it, and to keep that up say every 10 days, I think it would not only discourage swarming but prevent it entirely. At the same time it would discourage if not prevent entirely a good crop of honey.

Exposing Combs to Cold

1. Does it injure empty extracting combs to keep them where the temperature goes below freezing?

2. If not, would it be safe to stack them up in the yard with a sheet of heavy tarred paper between each super?

WISCONSIN.

ANSWERS—1. The combs may be slightly cracked with very hard freezing, but that is a small matter compared with the advantage that freezing kills all the bee-moth, their larvae, and even their eggs. I should certainly prefer to have the combs exposed to freezing in winter.

2. That will be all right.

Bee-Space Above Frames

I build my own hives. Is it necessary to have bee-space between cover and brood frames? I find some hives do not have this.

MINNESOTA.

ANSWERS. By all means have a space of about ¼ inch between cover and top-bars. This for the sake of allowing a passage over the frames in winter, and also because if there is no such space the bees will glue the cover tight to the top bars. This is on the supposition that there is nothing between the cover and top bars. Formerly it was a more or less common practice to have a sheet or quilt over the top bars, and in that case no space is needed except enough room for sheet or quilt.

Best Kinds of Clover and Locust—Buckwheat

1. Which is the best kind of clover for bees, the ordinary white clover or the big sweet clover?

2. Our nurserymen do not seem to know what kind of locust trees I should set out for my bees. Will you please tell me?

3. I have a patch of buckwheat now in full bloom but my bees do not pay any attention to it. What do you think is the cause of this?

OKLAHOMA.

ANSWERS—1. Circumstances alter cases. If you mean which is the best kind for you to encourage, then it depends upon what you already have. If white clover is plentiful and you have no sweet clover, by all means encourage the latter. If you have plenty of sweet clover and little white clover, then pursue the opposite course. It should be said, however, that it is much easier to increase sweet than white clover. Unless you own land by the hundred acres, so as to change the land from cultivated crops to grazing, you can have little effect on the amount of white clover, while you can easily scatter sweet-clover-seed in waste places where it will multiply.

Your question may, however, be as to which is better, a place where the bees have all the white clover they can take care of, or all the sweet clover. I don't know the answer to that question. I have always suppposed that bees could gather nectar more rapidly from sweet than white, and have supposed that was the general belief, but in Gleanings for August 15 the editor says: "It is probable that there is no great amount of nectar at any one time in the sweet-clover blossoms; for very often, in spite of the abundant growth, the bees do not get very much surplus." Possibly we may, before long, have reports from those whose bees have access to large areas of sweet clover that will help settle the question. Until that statement in Gleanings, I should have said that sweet clover would give more surplus than white. But I'd rather have both, for white clover yields before sweet, then both run awhile together, and sweet continues after white is all done.

2. I don't know. I have an impression that the common black locust is the better honey-yielder, but the honey-locust may be better than I think. Certainly the name would indicate it. Can any one tell us about this?

3. I think buckwheat sowed about the first of July yields nectar better than that sowed earlier, and yours may have been sown too early. However, buckwheat is like white clover and other plants, it sometimes fails to yield nectar, no matter whether early or late, and I don't know why.

Chickens Eating Bess—Supers—Moving Bees

1. Is it a common thing for chickens to eat bees? We had one that would stand in front of a bee-hive and eat bees until it was full. I thought it would die but it kept it up for two weeks and was doing well.

2. I have a colony of bees that wouldn't accept the super. I put in a section of honey and still they wouldn't accept it. I exchanged their super for one on another hive with a few pounds of honey and lots of bees; gave them a little smoke and put it on their hive. I watched for dead bees but didn't see any. Did they stay in the hive or go back to their old home?

3. The super is now nearly full. Is it advisable to take it off?

4. Next spring I want to move 20 colonies in a wagon. When would be the best time to move them and how would be the best way to load?

INDIANA.

ANSWERS—1. Testimony is somewhat mixed on this subject. For the most part it is claimed that chickens do not eat bees, or if they do it is only the drones. Some, however, say that chickens eat workers, especially some chickens that have learned the trick.

2. Like enough your colony was not strong enough to do much in supers. The bees that you gave in the super from another colony probably staid where they were put, at least most of them, but if there were any field bees among them they would likely return to their old home.

3. It is well to take away sections as often as a complete superful is ready, although it is hardly best to wait until the corner sections are all sealed, for if you do so the central sections will have their cappings darkened. The unfinished section may be assembled from different supers into one super and returned to the bees to be finished.

4 It doesn't matter such a great deal what time in spring you move them. If you move them when it is freezing hard, there is danger that the combs will break. If you move them after they have begun to fly freely, you must take the precaution to close the hives the evening before moving, otherwise you will lose some of the field bees.

Put them in the wagon with the frames running crosswise, as the greatest shaking is from the wagon swinging from side to side.

REPORTS AND EXPERIENCES

Queen-Breeding Notes

It looks as if every man has a way of his own and believes his way is best. On page 236, American Bee Journal, Mr. A. D. D. Wood shows his way of catching and clipping a queen's wings. While that way will do, I have one that I like better and gives no chance to injure the queen.

I pick up the queen by both wings with my right hand and put my first finger under her. She will take hold of my finger with her feet (three on each side of finger). I now grip the three legs on the left with thumb and finger on left hand and with my right hand I use the slim shears and clip either wing or both if I wish and put her head in the hole in the cage. With one finger behind she marches in. I then hold the cage between thumb and middle finger of the left hand and the first finger acts as a door to close the hole in cage to prevent the queen and bees from escaping while filling the cage with escorts.

It is an established fact that some queens are injured in the mails and I believe very few if any, are carelessly handled by the queen-breeders. As a sample case I will state that Brother Wood sent me a $5.00 queen, and I am sure he put her up in fine condition. But she has never (since I received her) had a strong colony of bees and some of her daughters are extra good breeders.

The lack of fresh air, the sudden stoppage of egg-laying, the rough handling of the mails and the confinement in small cages, would all have a tendency to do damage to a queen that is taken from her hive in the prime of her egg production.

We, as breeders, must use large, well ventilated cages and use the best judgment in making proper food to provision the cages and put in escorts of proper age. Then the purchaser should understand that when the queen is damaged Uncle Sam is to blame and not the breeder.

GRANT ANDERSON.
San Benito, Tex., July 26, 1913.

Too Dry for Clover

The basswood honey crop was good this year. The white clover started out fine but when it was in full bloom the dry, hot weather burnt it out so it was not what was expected.

JOHN B. WELS,
Dubuque, Iowa, Aug. 4, 1913.

Bee Sense

A few years ago, Peter Brandow of Tiskilwa, Ill., moved on a farm, caught a swarm of bees out of the trees around the house, and made a hive for it out of old boards. In two years he had seven colonies, he sold three of them for $5.00 apiece. Last spring he put up fifteen little decoy boxes, made from waste board from the store, and so far caught thirteen swarms, by placing the entrance facing the south or west, for bees know which way the storms come and will not enter a place exposed to them. He has now seventeen good colonies of bees. His older colonies have over 100 pounds of honey in them, but he tells the grocers he will not handle it 'till cool weather, for the combs stand up under the handling better in the fall.

Who can beat that record for a beginner. The next best that I have heard of is that his nephew, who never has tried to have bees, caught seven swarms out of the trees this year, and therefore has not bought any bees for his start.

REV. GEO. A. HOOD.
Tiskilwa, Ill.

Will Not Extract Closely

Honey flow through June was good, about 75 pounds per colony, but ended July 1st, two weeks sooner than usual. July is very dry. Weather Bureau report July driest on record. Prospects poor for fall flow. I will not dare extract too closely.

E. A. DORSEY.
Dixon, Ia., Aug. 2, 1913.

Good Crop in Iowa

I started this season with 40 colonies of bees. I have 63 now and have taken off 2640 lbs. 94 supers on the hives yet, about 40 of them full. I expect over 4000 pounds. We never had a better year. Plenty of white clover and basswood. I had two colonies on scales several days and they gathered from four to seven pounds. One day one of them gathered seven pounds. They kept me busy through the best of the season. I have kept bees nearly thirty years and have passed my 75th year. I had 3707 pounds of honey last year, but this is my banner crop. The honey is fine. I am putting it on the market at 13c and may have to drop it one-half cent. I am the only beekeeper in this county that went through the hard seasons three and four years ago and held his own. I very seldom lose any through the winter. I have a dry cellar. If I had twenty years more to live and was well and hearty, I could make money with bees now. But I am an old war pensioner and have seen hard service.

WM. CLEARY.
Algona, Iowa, Aug. 8.

APIARY OF FRANK HILL, SABETHA, KAN.

Another Dry Report

Attached are two pictures of my small apiary. They did mighty well 'till about July 8, when we had a lot of hot winds that stopped everything. I have 3000 pounds extracted and about 100 cases No. 1 comb honey all from clover.

A KANSAS APIARY WHEN THE CROP IS ON.

It looks bad, as we are having the driest time any one knows of in this part of Kansas. We have had no rain since June 25 and the temperature has been close to and above the 100 mark most of the time.

FRANK HILL.
Sabetha, Kans., Aug. 12, 1913.

Over 100 Pounds to the Colony

Up to date I have taken off 621 sections of nice clover honey from 12 colonies, Spring count, and expect to take off at least 300 more; then the golden rod will be in next and then buckwheat, but of the latter there is not much in this locality. If this season is good for the golden rod and buckwheat, I expect to take off at the least calculation 1200 sections for this season. Not bad for a man who works every day in a saw mill, who has to do all his apiary work before he goes to work and after he comes home in the evening; not bad for a man who lives in the city not over four squares from the Court House. No swarms got away from me this season, as I clipped all queens and my wife catches them in a cage I have and puts them back in the hive from which they issue. Next morning I go through the hives and cut all the cells; then when the queen issues again in two or three weeks, I kill the old queen and cut out all cells but one. This does away with the swarming for the balance of the season; and you ought to see the hives. They are boiling over with bees. This plan gives me young queens to go into winter quarters. All of my honey brings 20c here at the house and it is no trouble to sell a man the second time.

F. LANGOHR.
Columbia City, Ind., Aug. 6, 1913.

A Beginner in Dakota

I am a beginner at the bee business and have never seen any bees except my own. North Dakota has less bees than any other state in the Union. I started last year in April having one colony shipped to me from Minnesota. I had about seven swarms last summer, but all but two were destroyed by robbing. My first swarm filled an eight frame hive with brood and swarmed again just thirty days later. I took 100 pounds of honey from the two surviving colonies. I wintered two colonies and they seemed to come out in the spring as strong as when I put them in in the fall. I wanted increase and during the winter I had prepared sixteen hives with supers, but up to date, July ..0, there is no sign of swarming. I obtained some pound packages of bees from Alabama in April, each of which has now increased to about four frames. With these I now have six colonies. But I have not had a drone in any of my colonies this summer, except some that came from Alabama and they were all killed off within a week after they arrived.

As near as I can judge the symptoms, my strongest colony has been afflicted with bee-paralysis for the past six weeks. This colony has already filled one extracting super with honey and has made a good start on a super of sections. It is doing good work and yet each day it drives out about a teacupful of dead or sick bees. These bees lie on the ground in front of the hive for several days before dying. It was getting worse until last week when we had a heavy rain, which seemed to check it. I have thrown fresh earth over the dead and sick bees and have tried to sweep them away but each morning there would be a new pile accumulated.

Perhaps this trouble will disappear when cold weather comes. Our honey flow ends about September 1, and as there is no prospect of a natural swarm I intend to divide one colony which is not quite strong enough to make any surplus, and think I can build it up to two good colonies for winter.

C. E. GOODSELL.

Dunseith, N. D., July 20, 1913.

Dry in New York

White honey crop is a failure. Buckwheat has got to have rain soon to amount to anything.

GEO. L. FERRIS.

Atwater, N. Y.

Caught 20 Swarms

My little busy bees are rushing me in this hot weather. Last winter I lost all but seven colonies. I cleaned out the old hives, set them around in the timber and have caught twenty swarms. I shall get five or six barrels of honey and one thousand pounds of super honey.

A. C. BUTLER.

New Castle, Neb., July 30, 1913.

Classified Department

[Advertisements in this department will be inserted at 15 cents per line, with no discounts of any kind. Notices here cannot be less than two lines. If wanted in this department, you must say so when ordering.

BEES AND QUEENS.

Phelps' Queens are hustlers.

Nutmeg Italian Queens, leather color. After June 1, $1.00. A. W. Yates,
Hartford, Conn.

Golden Queens that produce 5 and 6 band bees. Untested, $1.00; Tested, $3.00.
1A9t Robert Inghram, Sycamore, Pa.

For Sale—Pure Italian Queens, by return mail; no disease. C. M. Scott & Co.
1004 Wash. St., Indianapolis, Ind.

A Limited number of Leather Colored Italian queens. Send for price list.
Geo. B. Howe, Black River, N. Y.

Bees and Queens from my New Jersey apiary. J. H. M. Cook,
1Atf 70 Cortland St., New York City.

For Sale—Choice Golden Queens that produce Golden bees equal to any.
Wm. S. Barnett, Barnett's, Virginia.

Will Sell untested Goldens during September and October for 50 cts each, or six for $2.50. J. T. Elkinton, Jennings, La.

For Sale—Golden untested queens 70 cts. each, or $7.25 a dozen. Safe arrival guaranteed. D. F. Talley, R.F.D. 4, Greenville, Ala.

Golden All-over Queens. Untested, $1.00. Tested, $3.00. Breeders, $5.00 and $10.
1A9t Robert Inghram, Sycamore, Pa.

Queens—Improved red-clover Italians, bred for business; June 1 to Nov. 15. Untested queens, 75c; select, $1.00; tested, $1.25 each. Safe arrival and satisfaction guaranteed. 1A1y H. C. Clemons, Boyd, Ky.

Wanted—Young man, single, wants steady employment in apiaries; five years' experience; will go anywhere. Mention wages.
A. R. Kirkman, Wallhalla, Mich.

For Sale—Italian queens, 3 bands. Untested, one, 60 cts; six, $3.50. Tested, double price. Satisfaction guaranteed.
J. I. Banks, Rt. 3, Liberty, Tenn.

Hardy Northern-reared Queens of Moore's strain of Italians; ready June 15. Untested, $1.00; 6 for $5 00; 12 for $9.00. See testimonial on page 210. P. B. Ramer, Harmony, Minn.

I Will Make quick delivery of Untested Italian queens (Doolittle strain). 60c each; $5.00 a dozen. I ship nothing I would not use myself. Edward O. Meserve,
Box 126, Ventura, Calif.

Virginia three-banded Italian queens. Untested, 75 cts. Tested $1.00. All dead queens replaced free. Ready May 15. 6A4t
S. Click, Box 16, Rt. 2, Mt. Jackson, Va.

Day-old Virgin Queens will please you. Good way to get fine Italian stock; 50 cents each; $5.00 per doz. Untested, $1.00. Tested, $1.50. Geo. H. Rea, Reynoldsville, Pa.

For Sale.—Untested queens that produce, 75c; tested, $1.00; hybrids, 30c. S. H. Rickard,
8A3t 506 Machesney Bldg., Pittsburg, Pa

For Sale—Choice virgins, 49 cts. each; 3 for $1.00; untested, 60 cts.; tested, $1.25; breeders, $2.50. Italians or Carniolans.
Stanley & Finch, 1451 Ogden Ave., Chiciago.

For Sale.—Untested Golden Italian queens 50c each; 4 hybrid queens, $1 00.
8A2t J. F. Michael, Winchester, Ind.

Phelps' Queens will please you.

Italian Queens—3-band bred from the best stock procurable for honey-gathering qualities. Untested, June, $1.00; after, 75c. Tested, $1.50; select tested, $2 00 5A4f
R. A. Shults, R. F. D. 3, Cosby, Tenn.

Golden Queens that produce Golden Workers of the brightest kind. I will challenge the world on my Goldens and their honey-getting qualities. Price, $1.00 each; Tested, $2.00; Breeders, $5.00 and $10.00.
2Atf J. B. Brockwell, Barnetts, Va.

Montana Queens, bred in the Musselshell Valley. No other bees within 60 miles; foul brood unknown; all queen candy boiled. Three-banded Italian queens ready June 1. Untested, $1.00. Tested, $1 50. Orders booked now. 6A4t Elso Apiary, Elso, Mont.

Special—Golden-all-over queens that produce workers of the brightest kind. 5000 mated queens was my sales last season. Untested queens each 75c; 50, $32.50; 100, $60.00. Tested, $1.25. Select-Tested, $2.00. Breeders, $5.00 and $10.00. J. T. Dunn, Queen Breeder,
6A7t Rt. 3, San Jose, Calif.

The Two B's of quality—Italian Bees and Sicilian Buttercups. For all that is best, unexcelled. Untested queens $1.00 each; six for $5.00. 2-frame nucleus with untested queen, $3.50; 3-frame nucleus, $4.00. Buttercup eggs and stock in season. 6A4t
H William Scott, Barre, Vermont.

Golden and 3-band Italians, also gray Carniolan queens. Tested, $1 00 each; 3 or more 90c each. Untested, 75c each; 3 to 6, 70c each; 6 or more, 65c each. Bees per lb., $1.25; nuclei per frame, $1.50. A discount on orders booked 30 days before shipment. 1Atf
Bankston & Lyon, Buffalo, Leon Co., Tex.

Quirin's famous improved Italian queens, nuclei, colonies, and bees by the pound, ready in May. Our stock is northern-bred and hardy; five yards wintered on summer stands in 1908 and 1909 without a single loss. For prices, send for circular.
Quirin-the-Queen-Breeder, Bellevue, Ohio.

Golden and 3-band Italians, also gray Carniolan queens. Tested, $1.00 each; 3 or more 90c each. Untested, 75c each; 3 to 6, 70c each; 6 or more, 65c each. Bees per lb., $1.25; nuclei per frame, $1.50. A discount on orders booked 30 days before shipment 3Atf
C. B. Bankston, Buffalo, Leon Co., Tex.

Three-Banbed Italian Queens and Bees. Untested queen, 75c each; six, $4.25; twelve, $8.00. Tested, $1.25 each; six, $7.00; twelve, $12.00. For select queens add 25c each to the above prices. Nuclei without queens, 1-frame, $1.50; 2-frame, $2.50; 3-frame, $3.00. 1-lb. bees, $1.50; ½-lb. bees, $1.00. Add price of queen wanted with bees.
Robert B. Spicer, Wharton, N. J.

Carniolan Queens—These queens are bred from best imported strains. If any queens should be impurely mated we will replace them free of cost. Prices for balance of season: Untested, one, 75c; six $4 25; twelve, $8.00. Tested, one, $1.00; six,, $5.50; twelve, 10. Address,
Wm. Kernan, Rt. 2, Dushore, Pa.

Choice Queens from June to Sept. 1 at $1.00 each; six for $5.00. Place orders now, and have them filled in rotation. 5Atf
D. J. Blocher, Pearl City, Ill.

This is a good time to introduce Phelps' Golden Italian queens. We will have them until snow flies. Send for prices on late orders. C. W. Phelps & Son,
3 Wilcox St., Binghamton, N. Y.

Fine Italian Queens—Three banded; especially prolific, hardy and gentle. Unexcelled as honey gatherers. Personal attention to orders. Satisfaction guaranteed. Queens by return mail. Untested, 75c each; six for $4.25; doz., $8.00.
J. F. Archdekin, Rt. 7, St. Joseph, Mo.

Murray's famous North Carolina bred Italian queens (red clovers and goldens) for sale again. As good as the best; no foul brood known. They are as good honey gatherers as can be obtained, and winter as well. My improved strain is carefully selected, and bred up from Moore's, Root's and Davis' improved stock. Select untested, one, 75c; doz., $8.00. Tested, $1.25. Select tested, $1.50; extra select tested, $2.00. Breeders, $3.00 and $5.00.
H. B. Murray, Queen-breeder, Liberty, N. C.

HONEY AND BEESWAX

"Null's Famous Melilotus Honey." Sample for stamp. Null Co., Demopolis, Ala.

Wanted—Comb, extracted honey, and beeswax. R. A. Burnett & Co.,
6A12t 173 S. Water St., Chicago, Ill.

For Sale.—Fine, Rich, Pure White Clover Honey; also Light Amber Alfalfa. Put up in any size packages, any quantity. Write for prices.
11Atf Dadant & Sons, Hamilton, Ill.

FOR SALE

For Sale—Empty second-hand 60-lb. cans-two cans to the case, good as new, 25 cents per case. C. H. W. Weber & Co.,
2146 Central Ave., Cincinnati, Ohio.

My Entire Apiary of 175 colonies Italian bees with complete outfit for running same for comb honey; also International Harvester Auto Truck. Selling on account of sickness. J. S. Shatters, Fort Lupton, Colo

For Sale—Forty Colonies of Brown Italian Bees in 10-frame dovetailed hives, Hoffman self-spacing frames. No disease. Same to be had any time after Oct. 1. Also Clover Extracted honey in any size packages.
A. J. Diebold, Seneca, Ill.

For Sale—Fine Italian queens: untested, 75c; $8 00 per dozen; tested, $1.00; breeders, $3.00. Nuclei, $1 25 per frame. Full colonies in new modern eight-frame hives, $7.00.
California Bee Co.,
509 S. Rowan Ave., Los Angeles, Calif.

For Sale—130 stands of bees with or without fixtures. Bees in good 8-frame hives. Hoffman frames, mostly wired. No disease. Owner died. Inspected by State Entomologist. Write. Mrs. Ida McCauley,
Rt 2, Madison, Ind

For Rent—An 80 acre small fruit and bee farm, with 75 stands of bees and fixtures suitable for running same. Six room frame house, new Two good barns and outbuildings; 40 acres in pasture; tobacco land. A man with small family; experienced in care of bees preferred. Must give best of reference. Write. Mrs. Ida McCauley,
R. D. 2, Madison, Ind.

SUPPLIES.

Bee-Supplies—none better. 35 years of experience.

1 Ideal Winter-Case, complete	$2.50
100 Hoffman Brood-Frames in flat	2.50
500 No. 1 Sections	2.50
100 Section-Holders, scalloped	2.00
100 Section Slats, ¼ inch	1.00
1 Champion Smoker	.70
Dadant's Foundation.	
Medium Brood, per pound	.59
Thin Surplus " "	66
Extra Thin " "	60

Discount on larger amounts.

Satisfaction guaranteed or money refunded.
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Bee-Keeper, let us send our catalog of hives, smokers, foundation, veils, etc. They re nice and cheap.
White Mfg. Co.,
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For Sale—Bees, Honey, and Bee-Keepers Supplies. A. E. Burdick, Sunnyside, Wash

POULTRY

For Sale — Buff Orpington eggs, pure bloods; $1 00 for 15. Satisfaction guaranteed.
2A1y W. H. Payne, Hamilton, Illinois.

HONEY LABELS

The Number of enquiries coming in for honey labels has been so large that we have decided to put in a stock of these for the convenience of our readers Should you be in need of anything in this line, send for a copy of our label catalog, which will be sent free.
American Bee Journal,
Hamilton, Ill.

SITUATIONS.

Young Married Man wants steady employment in apiaries; 12 years' experience. Furnish best of references. Will go anywhere.
Newton Cale.
8A3t Rt. 1, B. 88, Floresville, Tex.

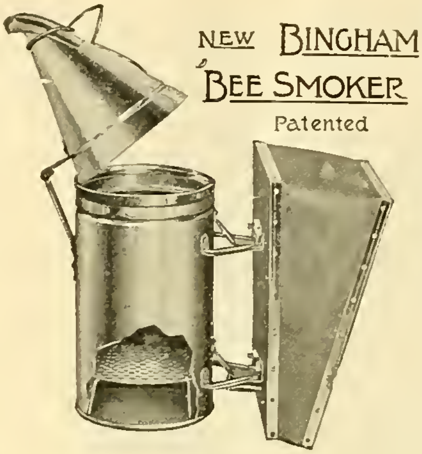
Wanted — Experienced help. Fall flow and winter packing; two months or more.
9A1t F. W. Pease, Lansing, Iowa.

MISCELLANEOUS

Reduced Prices on Eggs, Chicks, Duckings, White Leghorns, Penciled or Faun Runners. Free circular. Could use Italian Queens or Bees in exchange. 6A3t
R. O. Dickson, Box 61, La Harpe, Ill.

Comb Honey Wanted, size 4¼x4¼x2; best pale quality. Wrtie us with price and particulars. Packed and free on board. Canadian and London reference. T. Smith,
Cambridge Street, London, W., England.

"A Year's Work in an Out-Apiary" is the name of a booklet by G. M. Doolittle, the well-known honey-producer of New York State. He tells how he secured an average of 114½ pounds of honey per colony in a poor season. It is fully illustrated, and tells in detail just how Mr. Doolittle has won his great success as a honey-producer. The price of the booklet is 50 cents, postpaid, but we club it with the American Bee Journal for a year—both for $1.30. Every bee-keeper should have a copy of this booklet, and study it thoroughly. Address all orders to the American Bee Journal.



Bingham Bee-Smokers are Self Cleaning as the Cover Sets Fire and burns Up. The Valve in the bellows gives you a Smoker with life.

Smoke Engine	4	inch stove	$1.25
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Conqueror	3	" "	.75
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Two larger sizes with metal legs and hinged cover. In copper, 50c extra.

Parcels Post shipping weight, 2 pounds each. For sale at your dealers or direct

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THE WESTERN HONEY BEE

A new magazine owned and run by the bee-keepers, filled with Western life as depicted by the best talent on bee topics obtainable. Special department on crop and market conditions during season.

ADVERTISERS
Queen-Breeders' Department
1 inch, $2.00 per issue
Classified, 15c a line
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Published Monthly by the
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GEO. L. EMERSON, Manager
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HONEY LABELS

Owing to the many enquiries we have had for Honey Labels, we have put in a line of these for the convenience of our readers.

Send for catalog, giving samples of labels with postpaid prices. We also list **Envelopes and printed Letter Heads.**

American Bee Journal, Hamilton, Illinois.

“Falcon” QUEENS

Three-Band and Golden Italians, Caucasians and Carniolans

July 1st to October 1st	1	6	12
Untested - - -	$ .75	$4.25	$ 8.00
Tested - - -	1.00	5.50	10.00

Tested, $1.50 each; and Select Tested, $2.00 each.

All queens are reared in strong, vigorous colonies, and mated from populous nuclei. Instructions for introducing are to be found on the reverse side of the cage cover.

OUR BRAND OF FOUNDATION

“Falcon” foundation is coming in more constant use every year, being adopted by the largest and most prominent bee-keepers in this country, to say nothing of those in foreign lands where our foundation is largely used. We feel confident that after you have used one lot of **“Falcon”** foundation, which is made in our plant at Falconer, N. Y., you will purchase it in the future, and are sure that you and your bees will be pleased with it in every respect.

Full line of hives, sections, and supplies manufactured by us at Falconer, N. Y. Write for samples of our foundation.

All goods guaranteed. **A trial will convince you.** **Red Catalog postpaid.**

Central States distributers: H. S. Duby, St. Anne, Ill., C. C. Clemons, Bee-Supply Co., Kansas City, Mo.

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Where the good bee-hives come from

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Our Friction-top Honey-cans, Slip Cover pails, Honey Shipping cans, Round and Square, are standard containers for honey.

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With offices in all large cities

We Make a Specialty of
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SECTIONS

They are the Finest in the Land—None Better.

Our Prices will make you smile. We want to mail OUR BEE-SUPPLY CATALOG to every bee-keeper in the land. It is FREE. Ask for it.

H. S. Duby, St. Anne, Ill., carries a full line of Our Goods, and sells them at our regular catalog prices.

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Boyd, Wis.

Please mention Am. Bee Journal when writing.

BIG MONEY Growing Helianti, the new “wonder plant.” Beats ginseng or anything else that grows. Thrives in any soil or climate. Write for full particulars.

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Sell their members Friction-Top Honey-Pails and Cans at a low price as follows:

Aprox. Capacity	Per 100 Lots of 50	Per 100 Lots of 100	Per 100 Lots of 500	Per 1000 Lots of 1000
2-lb. Can		$2.25	$2 15	$20.00
2½-lb. "		2.75	2.60	24.00
3-lb. "		3.00	2 85	28.00
5-lb Pail	$5.00	4.75	4.50	42.50
10-lb. "	7.00	6.50	6.25	60.00
12-lb. "	7.25	6.75	6.50	62.50

If not a member, send a dollar extra with your first order, which will pay your dues for a year, and we will send you the **Bee-Keepers' Review** for the last half of 1913, giving the first six articles of that sensational series of ten articles, "'The Management of 3000 Colonies in 50 Yards:" also the April and May numbers of the **Review,** containing the report of the National meeting at Cincinnati, these two numbers alone containing 96 pages. A cordial invitation is extended to all bee-keepers to join the National at this time. Address, with remittance. **The National Bee-Keepers' Association, Northstar, Mich.**

W.H.Laws

Will be ready to take care of your queen orders, whether large or small, the coming season. Twenty-five years of careful breeding brings Laws' queens above the usual standard; better let us book your orders now.

Tested queens in March; untested, after April 1st. About 50 first-class breeding-queens ready at any date.

PRICES: Tested, $1.25; 5 for $5.00; Breeders, each $5.00. Address

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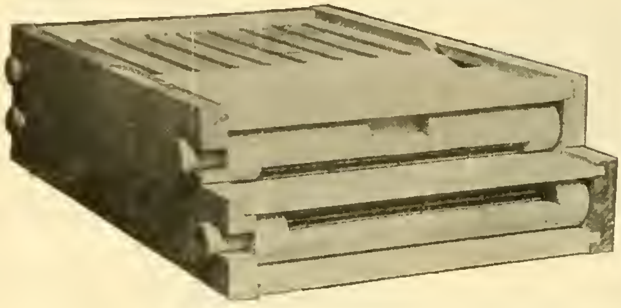

No worry When you are ready, adjust for swarming, or drones. Ask for a free folder

Proper Ventilation for Honey Flow.

PRICES: $2.00 F. O. B. LIVERPOOL, FOR 8 FRAME SIZE.
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Tennessee-Bred QUEENS

41 years' experience in Queen-Rearing
Breed 3-band Italians ONLY

I am at last up with all contracts, and can fill orders by return mail—2 to 5 dozen daily. Prices remainder of season:

Untested, one for 75c; six, $4.00; twelve, $7.50. Tested, double these prices. The very best BREEDER, $10; Select breeder, $5.00. Write for prices on larger orders.

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BEE-KEEPER'S NOVELTY POCKET-KNIFE

HOWARD M. MELBEE,
HONEYVILLE, O.

Your Name and Address will be put on one side of the handle as shown in the cut, and on the other, side a picture of a Queen-Bee, a Worker-Bee, and a Drone-Bee. The handle is celluloid, and transparent, through which is seen your name. If you lose this Knife it can be returned to you, or it serves to identify you if you happen to be injured fatally, or rendered unconscious. The cut is the exact size; it is made of best steel. When ordering be sure to write exact name and address. Knife delivered within two weeks after we receive order.

Price, postpaid, $1.00; or with a year's subscription to the American Bee Journal—both for $1.80; or given FREE as a premium for sending us 3 New subscriptions at $1.00 each.

American Bee Journal, Hamilton, Illinois.

RUSH ORDERS

BY MAIL Has your "forgettery" been working? And right this minute you need foundation or other items. See page one of our catalog, and it gives parcel post rates on various articles.

BY EXPRESS Larger shipments than can go by mail we can rush out at once. Parcel post and express orders receive our first attention.

BY FREIGHT Our rule is, "Ship same day as order is received," and we break it only when absolutely necessary. Notice that Lansing is the railroad center of Michigan from which freight shipments can be delivered quickest.

☞ And we fill all orders with Root's Goods. Just remember that, too. Send for catalog. **Beeswax wanted.**

M. H. HUNT & SON,
143 Condit St., - Lansing, Mich.

Established 1885

WE CARRY AN UP-TO-DATE LINE OF

BEE-KEEPERS' SUPPLIES

Write for our 64-page catalog free, and for lowest prices on supplies. Full information given to all inquiries. We handle the best make of goods for the bee-keeper. Freight facilities good. Let us hear from you.

JOHN NEBEL & SON SUPPLY COMPANY
High Hill, Missouri

P-O-R-T-E-R

(Trade mark.)

BEE-ESCAPE

SAVES {HONEY TIME MONEY} AT ALL DEALERS

Each, 15c; Doz., $1.65, postpaid

If your Dealer does not keep them, order from Factory, with complete instructions.

R. & E. C. PORTER, MFRS.,
Lewistown, Illinois

H. J. PFIFFNER

Wholesale and Retail Dealer in Bee-keepers' Supplies
Send for Catalog

Emmetsburg, Iowa.

NO 1913 CATALOGUE! To keep up the old price I will avoid all expenses possible and will not print any catalog. I have some 1912 left. Order from your old catalog, or I will mail you one.

Best white pine hive 1½ story 8 frame, $1.45; 10 frame, $1.60 in lots of 5. Best sections per 1000, $4.40; 2000, $8.60; 3000, $12.60; 5000, $20; No. 2, 50c less. Plain 25c less.

H. S. DUBY, St. Anne, Ill.

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PROGRESSIVE POULTRY JOURNAL?

It is published in Mitchell, South Dakota, and is a live paper devoted to the interests of better poultry and more of it. Has practical writers of experience in raising poultry. Well illustrated. Send for free copy.

Progressive Poultry Journal
Mitchell, South Dakota

ROOT'S POWER HONEY-EXTRACTORS

Our new catalog is full of information about these labor-saving machines. With the difficulty of getting competent help, the power extractors are being sold largely in this and foreign countries, and the present demand is far greater than ever before. Read what a California producer says in a letter to a disinterested party, which we were permitted to publish:

GENTLEMEN:—I should like to say a few words in favor of the ball-bearing Root Automatic Extractor, as I believe it is as near perfection as it can be. This machine runs so easily that a few turns to get it up to speed is all that is necessary; and the men, while using the No. 17, which I formerly had, could average only 1000 lbs. per day, while with this machine they can average 2000 lbs. with but one additional man. No apiary can afford to be without one of these machines.

I feel like congratulating The A. I. Root Co. for making an invention that is such a satisfaction, financially to the honey-producers interests.
B. B. HOGABOOM, Elk Grove, Calif.

—HERE ARE A FEW MORE—

A word about the power extractor I purchased from you through H. L. Jones, of Goodna. I found it to work very satisfactorily, and it will do all it is claimed to do and more. I use the gasoline engine for several purposes besides driving the eight-frame extractor, such as driving the washing-machine for the lady of the house, and corn cracking and grinding. I consider it one of the best speculations I made in connection with the apiary.
F. C. GOLDER, Pittsworth, Queensland.

Yours of the 16th, also the brake-band for power-extractor, came to hand. Thanks for sending it so promptly. This is my second season with the power extractor. I would not like to be without it now, even if I had only fifty colonies.
DAVID RUNNING, Grindstone City, Mich., July 10, 1910.

I received the extractor I ordered of you some time ago. It arrived in good shape. I set it up and extracted 143 quarts of honey, sold it at 35 cents a quart. The extractor is just fine—does the work completely.
F. D. KING, Athens, Ohio, Aug. 16, 1912.

The engine I got of you this spring has done fine. We ran it all fall, and never had any trouble at all.
V. V. DEXTER, North Yakima, Wash., Jan. 19, 1911.

For Full Particulars See Our Catalog

The A. I. ROOT COMPANY, Medina, Ohio

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RAMER'S QUEENS

Of Moore's Strain of Italians

Ready June 15

Untested, $1.00; 6 for $5.00; 12 for $9.00

April 28, 1913.

P. B. RAMER, Harmony, Minn.—

Dear Sir:—The 30 queens I got of you in 1911 were the best queens; built up the fastest, and gave the largest yield of honey I have had in twenty years of bee-keeping. My average was 160 lbs. to the colony in 1912, and I lost a part of the flow for want of super room.
Yours very truly,
HALVER J. HALVERSON.
Rt. 4, Preston, Minn.

ITALIAN BEES

Choice Home Bred and Imported Queens

Reared in full colonies

Prices for August

One untest. queen	$ .90
One tested queen	$1.30
One select tested queen	$1.60
One Breeder	$2.45
One comb Nucleus, no queen	$ .90

½ lb. bees, $ .90; 1 lb. $1.75.
Safe arrival guaranteed. For description of each grade of queens send for free catalog.

J. L. STRONG,
204 E. Logan St., CLARINDA, IOWA

QUEENS OF MOORE'S STRAIN OF ITALIANS

PRODUCE WORKERS

That fill the supers quick
With honey nice and thick.

They have won a world-wide reputation for honey-gathering, hardiness, gentleness, etc. Untested queens, $1; six, $5; 12, $9.00. Select untested, $1.25; six, $6.00; 12, $11. Safe arrival and satisfaction guaranteed. Circular free

I now have 750 nuclei, and am filling orders by return mail.

J. P. MOORE, Queen-breeder,
Route 1, Morgan, Ky.

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GRAY CAUCASIANS

I was the first to import the true Gray Caucasian Bee into the Occident. They are bred under my instructions in the Caucasus Mts. expressly for me. Their WORTH is unexcelled. Send for prices to

A. D. D. WOOD

Box 61, Lansing, Mich., or
Box 82, Houston Heights, Texas

P. S.—They are a true race, and not made by Man.

Fine Yellow

Italian bees & queens. If you need a fine yellow Queen quick, try Fajen and you will order more. Extra fine queen, only $1.00; untested, 75c. 3-fr nucleus, only $2.75. Full colony in 8-fr. hive with fine tested queen, $5.50.

J.L.Fajen, Stover, Mo.

HONEY AND BEESWAX

CHICAGO, Aug. 18.—Arrivals of honey up to this date have exceeded that of the ordinary season, and at present the market is not active. This may be attributed in part to the hot weather and the fact that the peach season has not yet culminated. Prices are nominal, with the best grades of white comb bringing from 17@18c per pound, and the off grades from 1@3c less. The best grades of extracted bring from 8@9c per pound, according to kind and quality, with the ambers ranging from 6½@7½c per pound. Beeswax is steady at from 30@32c per pound, according to color and cleanliness.
R. A. BURNETT & CO.

BOSTON, Aug. 20.—Fancy and No. 1 white comb, 16@17c per pound. New fancy white extracted in 5-gallon cans, 10@11c. Beeswax, 30c. Pure white honey in barrels, 9c per pound.
BLAKE,-LEE COMPANY.

INDIANAPOLIS, Aug. 19.—Honey is moving freely. Fancy white comb is selling at 16@17c; No. 1 white, one cent less Finest extracted, 9@10c in 5-gallon cans. Beeswax is in good demand, and producers are being paid 32c, cash or trade.
WALTER S. POUDER.

DENVER, Aug. 7.—The new crop of comb honey is coming in freely now, and quality is good. Owing to hot weather the local demand is light. We are selling in a jobbing way at the following figures: No. 1 white, per case of 24 sections, $3.15; choice, $3.02; and No. 2, $2.88. White extracted honey, 9c; light amber, 8c; strained, 6¾@7c. We pay 26c per pound in cash and 28c in trade for clean yellow beeswax delivered here
THE COLO. HONEY-PRODUCERS' ASS'N.,
Frank Rauchfuss, *Mgr.*

SAN FRANCISCO, Aug 19.—Comb honey is now being offered, and No. 1 fancy 16@17c; No. 2, 13@15½c; darker grades, 10@12c. Water white extracted, 8@9c; amber, 6@7c, and darker 4½@6c per pound. Beeswax from 24@30c, according to quality. New honey, both comb and extracted, are finding a ready sale; the season's supply is 30 days late.
JOHN C. FROHLIGER.

CINCINNATI, Aug. 19.—We are receiving daily many shipments of honey, both comb and extracted. No. 1 comb honey is selling from 14@16c, according to the quality and quantity purchased. White extracted honey is selling at 9c per pound in 60-pound cans; larger lots less. The above are our selling prices, not what we are paying. For nice yellow beeswax, we will pay 30 cents delivered in Cincinnati.
C. H. W. WEBER & CO.

KANSAS CITY, MO., Aug. 20.—With the long drouth broken and cooler weather, the demand for honey, especially comb, is very much improved, and sales are equal to receipts. We quote: No. 1 white comb, 24 section cases at $3.50; No. 2, $3.00 to $3.25; No. 1 amber, $3.25; No. 2 dark and amber, $2.50 to $3.00. White extracted, per pound, 8@8½c. Beeswax, 25@28c.
C. C. CLEMONS PRODUCE COMPANY.

NEW YORK, Aug. 15.—Owing to heavy drouths in New York State, and in fact all the eastern States, the crop of white comb honey is far below an average, and our market is in a position to handle Western comb honey to good advantage. As a rule, we do not solicit or encourage shipments of comb honey from the West, but for the reason above stated, this year is an exception.
HILDRETH & SEGELKEN.

CINCINNATI, Aug. 18.—The market for comb honey is very good, owing to the lower level of prices, and we are selling fancy comb honey at 15@16½c per pound at our store. Extracted honey is of slower sale than was expected, but this is due to the big crop, and the bee keepers selling so much locally, which bars us temporarily. Nevertheless, this is a good thing, for when their supply is sold they will have created a good demand for this article. We are selling white clover extracted honey in 60-pound cans at 8@10c a pound, while for amber honey in barrels we are getting 5½@7½c a pound. The above prices are according to quality and quantity purchased. For strictly choice bright yellow beeswax we are paying 30c a pound delivered here. THE FRED W. MUTH CO.

LOS ANGELES, Aug. 15.—Since writing on June 30, quoting light amber honey at 6⅛c, we have received a good many offerings from the producers, and it is possible that the price named could be shaded an eighth of a cent per pound on firm offers.
HAMILTON & MENDERSON.

CORN HARVESTER with Binder Attachment cuts and throws in piles on harvester or winrow. Man and horse cuts and shocks equal with a Corn Binder. Sold in every State. Price, $20.00. W. H. BUXTON, of Johnstown, Ohio, writes: "The Harvester has proven all you claim for it: the Harvester saved me over $25.00 in labor last year's corn cutting. I cut over 500 shocks: will make 4 bushels corn to a shock." Testimonials and catalog free, showing pictures of harvester. Address,
NEW PROCESS MFG. CO., Salina, Kan

An Active Season is Here!

A carload of perfectly new goods is just on hand from the factory, and another car is expected any day, and the factory has booked us for four cars. This brings up our assortment so that we can now furnish almost anything listed in the catalog at once.
Hives should be ordered at once if they are to be ready for swarms. Frames, and other inside fixtures, too, should be put together now.
If you are wanting any special goods, orders should be made at once. Other cars are coming regularly from the factory, and we can save you considerable in transportation charges by having your goods come with ours in the car.
The mailing of our new catalog was completed some time ago. If you are not on our mailing list send us a postal-card request for this catalog.
If you want to buy in quantities considerably larger than quoted in the catalog, give us a list of your needs and we will quote price accordingly.
If you have never tried Root quality goods, make a beginning this season. You will not be disappointed in results. Our branch is maintained for service in this line and we can give it to your entire satisfaction.
We are sole agents in Ohio for the Roller Tray Incubator and Brooder—the best in the market. Write for our catalog.

C. H. W. WEBER & CO.

2146 Central Avenue.

CINCINNATI, - - - - - - - - OHIO.

"If goods are wanted quick, send to Pouder."

BEE-SUPPLIES

EQUIPMENT Store room built expressly for the business; large concrete basement with just enough moisture to prevent breakage in sections; no shrinkage in dovetailed corners of supers and hives.

QUALITY Root goods at factory prices. The kind that I have sold for nearly a quarter of a century, and the kind that you can afford to recommend to your neighbors. I might have increased my profits for a short time by handling other goods, but I would not have remained so long in business. Many articles in my catalog can reach you by Parcel Post, and I assume all responsibility in safe delivery of the goods. Catalog free.

WALTER S. POUDER, Indianapolis, Ind.
873 Massachusetts Avenue

COMB FOUNDATION

WITH THE SAME TASTE
WITH THE SAME SMELL
WITH THE SAME FIRMNESS
AS THE COMB THE HONEY-BEE MAKES

How do you Obtain Yours?

THE OLD WAY:—By selling your Beeswax. Reasonably sure but expensive.

THE DITTMER WAY:—By shipping your wax to us and having it made into Comb Foundation and then returned to you.

Write us for further information and samples, also prices and discounts on Bee-Supplies

Gus Dittmer Company, Augusta, Wisconsin

Eastern Bee-Keepers

Furnishing bee-supplies has been our business for 22 years. We are also honey-producers, operating several hundred colonies for honey. We have started many people who have made a success of the business. We still furnish them their supplies. They stick to us. You will if you get acquainted. We advocate only practicle articles. Let us mail you our catalog on what you may need.

I. J. STRINGHAM.
105 Park Place, New York City
APIARIES: Glen Cove, L. I.

Rebuilt Remington Typewriters (No. 6)
or Smith Premier Typewriters (No. 2)

Prices, $30 to $35. Send $5.00 down and we will send the machine. **GREAT OPPORTUNITY.** Address,

Remington Typewriter Company
(Incorporated)
325 Perry Street, Davenport, Iowa

English Honey-Spoon.

This fine 90c Honey-Spoon and the American Bee Journal for one year—both for only $1.75. Send all orders to the American Bee Journal, Hamilton, Ill.

Bee-Supplies

We are Western Agents for
"FALCONER"

Write for Fall Discounts—we can save you money. 1Atf

C. C. Clemons Bee-Supply Co.,
128 Grand Ave., Kansas City, Mo.

PAGE-KENKEL MFG. CO.

Manufacturers
OF THE

"NONE BETTER"
BEE-KEEPERS' SUPPLIES

Thirty Years' Experience

Perfect sections from young, white, basswood. White Pine Hives and Supers, Excellent Shipping-Cases, Brood-Frames, Separators, etc. We invite your correspondence.

Page-Kenkel Manufacturing Co.,
New London, Wis.

ITALIAN QUEENS!

Northern bred

Superior winterers, second to none. My free list explains it all. Untested, $1.00; select tested, $1.50. Bees by pound or half pound. Plans, "How to Introduce Queens" 15c; "How to Increase" 15c; both 25c.

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ITALIAN QUEENS

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AMERICAN BEE JOURNAL

OCTOBER 1913

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Finding Three Queens in One Swarm

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BEE JOURNAL

PUBLISHED MONTHLY BY
American Bee Journal
1st Nat'l Bank Bldg. Hamilton, Illinois

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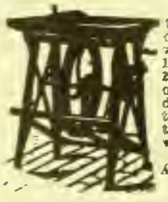

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This is a 64-page and cover pamphlet. 5¾x8½ inches in size, and printed on very fine paper. It is illustrated with over 30 beautiful pictures, all relating to bee-keeping. Its object is to interest people in the use of honey as a daily food. It contains a lot of information about the uses of honey, and a copy of it put in the hands of any person should make a good honey customer of him.

Besides the honey information, it contains three bee-keepers' songs, the words of all three having been written by Hon. Eugene Secor, of Iowa, and the music of one of the songs was written by Dr. C. C. Miller. The songs are these:

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The music alone is worth the price of the booklet.

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Gentlemen:—Last October I purchased three queens of you for my experiments with different queens, and wish to ask you if queens of this season will be of this stock? One of the Queens is the most remarkable queen I ever owned for prolificness, which she transmits to all her daughters.
Riddle, Oreg., July 4, 1912. L. W. WELLS.

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Gentlemen:—The queen you sent me came in good condition. She was one of the best I have ever bought. I have her introduced and she is doing business as if to the manor born I want another of those beautiful queens as soon as I can possibly get it for making up my fair exhibit. Please send a fine one. Such queens certainly advertise your business.
Darlington, Wis., July 31, 1912. C. R. BRIDGMAN.

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Gentlemen:—I bought a queen of you about 35 years ago, and from her I Italianized 150 colonies of the finest beauties of unusual good qualities. I lived near Milton Center, Ohio, at the time. Yours truly,
Portales, New Mexico, July 10, 1912. J. W. HOUTZ.

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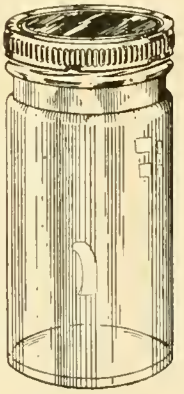

Honey packages and bottles either round or octagon, with American Metal Screw Can.

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We will ship from Detroit, Mich., or Minneapolis.

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John M. Davis, Spring Hill, Tennessee

Dr. Peiro will continue to give the readers of the American Bee Journal free advice regarding the subject of SURGICAL and MEDICAL treatment. Many have availed themselves of this offer. Return postage is all you need to send. Address, DR. PEIRO, 4536 Perry Street, Chicago, Ill.

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Cash for Your Honey at Your Door

The committee in charge of the Honey-Producers' League Fund has $604, to be used in advertising uses of honey, and to create more demand for honey. They have purchased several thousand books entited, "The Use of Honey in Cooking," with chapters on "What is Honey?" "Food Value of Honey;" "How Comb and Extracted Honey is Produced;" "Why Honey Granulates, and How to Liquefy the Same;" "Why Different Flavors of Honey from Different Flowers;" "Why Use Honey in Cooking in Place of Sugar;" "Where to Keep Honey," and over one hundred recipes for the use of honey in cooking, candies, cough syrups, creams, and soaps—58 pages of valuable information.

If you want a home market for more honey than you produce, get some of these recipe books and use judgment in giving them to those you believe will use honey for table and cooking, asking each to give it a trial.

I have talked with bee-keepers of several States who have been thus using these books for their customers, and who now have to buy honey to finish filling orders. To get these books before consumers, I will **GIVE** them to bee-keepers and members of the National Bee-Keepers' Association who may ask for them, provided they will pay postage on the books ordered, and who will, in application, state the number of colonies of bees they had in the spring of 1913, and pounds of comb and extracted honey produced this season, and prices they are selling at.

Postage on the books is 68 cents for 100 copies. Other lots in proportion. If bee-keepers want a growing home market for all their honey, here is a chance to get it for nothing. When this one lot of books is gone, others getting them later will have to pay pubishers $4.50 per 100 copies.

N. E. FRANCE, - - Platteville, Wisconsin

Chairman of League Fund Committee

AMERICAN
BEE JOURNAL

(Entered as second-class matter at the Post-Office at Hamilton, Ill., under Act of March 3, 1879.)

Published Monthly at $1.00 a Year, by American Bee Journal, First National Bank Building

C. P. DADANT, Editor.
DR. C. C. MILLER, Associate Editor.

HAMILTON, ILL., OCTOBER, 1913

Vol. LIII.—No. 10

EDITORIAL COMMENTS

Distance Drones Fly

Regarding the editorial under this heading in the August number, it is evident, from the testimonials of Swiss and Savoyard apiarists, that there is a great difference in the length of flight in different localities or directions, and that this depends upon the configuration of the land. Hilly, woody regions permit of the flight of bees up and down the valleys at long range, but less across the steep bluffs. This is rational, and the reverse could hardly be expected. Better proof of this can be had in mountainous countries than almost anywhere else.

Flour for Uniting

The use of flour in uniting bees, although little used in this country, is much esteemed by some bee-keepers across the water. In Leipziger Bienenzeitung a writer tells of his success. A colony that had swarmed became drone-rearing (laying workers). He shook the bees from their combs upon the bottom of the hive, and with a little flour dusted them until all were powdered. Upon these he shook a nucleus with a good queen, dusted also, and then gave them some better combs. Gradually the diminutive drones disappeared, and a good colony resulted.

In the 2 or 3 years since that time he has caged no queen in introducing. He merely drops her on the pile of powdered bees struggling on the bottom of the hive, and has never had a failure.

Red Clover Bees

Since July 1 this locality has had scarcely a drop of rain. White clover is suffering, and unless the weather changes soon it will be hard on next season's clover crop. The second crop of red clover has come up since the last rainfall, and as its blossoms were very short the bees were able to reach the nectar. Near-by fields wree covered with bees, and every one's colonies are now the real Red Clover Strain. Although it is a step forward to breed for long-tongued bees, we have yet to see the first colony of bees that will work *consistently* on red clover.

During this drouth many of our readers no doubt will be led to believe they have Red Clover Bees. Before coming to a conclusion, we would advise them to wait until next year and test those colonies on the first red clover blossoms.

Potato Vines in Europe

The tales of a traveler sometimes read so as to leave one in doubt about his veracity. So if some of the readers are dubious concerning the following statement, I will not hold a grudge. I would not have believed it myself:

In a little village of Savoy, near Albertville, I visited an apiary of some 20 hives placed at the rear of a vegetable garden. A patch of exceedingly vigorous potatoes attracted my attention. I walked to the middle of it and stood by a potato stem which reached to the uppermost button of my vest, 51 inches from the ground. The spot is sheltered against high winds, else the potato vine would have been laid low by the breeze long before I saw it.

Honey League to Distribute Booklets

We wish to call the attention of our readers to the rare opportunity they have to push their honey sales by taking advantage of the offer by Mr. N. E. France on the opposite page.

A number of years ago a considerable amount of money was contributed by bee-keepers and supply dealers for the purpose of advertising honey generally. This fund was placed in the hands of a committee with power to use it for the purpose for which it was contributed. There remains of this fund over $600, which the committee has decided to use as explained.

The publishers' price on these books is $4.50 per hundred. They may be obtained through Mr. France for paying postage of 68 cents per hundred on them.

Mailing Old Combs

Many parties are sending their old combs by mail to be rendered into beeswax. One such shipment, weighing about 11 pounds, came through the mail and was literally devoured by moth. The postmaster, on emptying the mail bag, spilled moth worms all over the post-office desks and floor. The packages of newspapers which were in the same bag were filled with moth, the worms having even devoured a part of the newspapers. It is remarkable in how short a time these worms do so much damage.

We warn our readers not to ship combs by mail except during the winter months. Unless they have been treated with sulphur or carbon dioxide, it is much better not to ship combs at all except during the colder months of the year. When shipments have to travel by freight they are so long on the way that very often the entire consignment becomes devoured by the moth before destination is reached. Another such experience as the above would likely cause the postal authorities to bar old combs from the mails.

A Little Gain in Gathering and a Big Gain in Surplus

Not infrequently one hears it said: "My bees gathered twice as much this year as last," or "Some of my colonies this year gathered four times as much as others." This shows carelessness of expression or else wrong thinking. It is nothing uncommon to get twice as much surplus from the same apiary in one year as in another; and it is equally common to find in the same apiary colonies which store four times as much surplus as others; but probably very few have ever had twice as much honey gathered in one year as in another, and still fewer have had four times as much gathered by one colony as another in the same season, or indeed in two different seasons.

The truth is that there is carelessness as to discriminating between what a colony *gathers* and what it stores as surplus. And the probability is that not every one has any clear idea of the great difference there is between these two things. If we were to get down to the bottom thought of a great many, it would be something like this: "The honey a colony gathers is stored as surplus. Come to think of it, of course 20 or 30 pounds of it is used as winter stores; but the little that the bees otherwise devote to their own use is a negligible quantity." Instead of this, the amount of stores consumed in winter is much the smaller part of the entire year's consumption. Adrian Getaz computes that it requires 200 pounds of honey to support a colony for an entire year. So if a colony stores 50 pounds of surplus, it must *gather* 200 pounds plus the 50 pounds of surplus, or 250 pounds in all. In other words, the 50 pounds of surplus is only a fifth of the whole amount gathered by the bees. That 200 pounds is a fixed charge upon the business—an "overhead charge," as business men say—and it must first be taken out before any surplus can be reckoned.

With these views in mind, it is easy to see that to double the amount of surplus stored it is by no means necessary to double the amount of honey—or nectar, if you please—*gathered* by the bees. The same may be said about increasing to any other degree.

Let us do a little figuring. Suppose we have a colony that in a given season is capable of storing 100 pounds of surplus. To do this it must gather 200 pounds plus 10 pounds, or 210 pounds. Then suppose we requeen it with a queen of stock capable of gathering a little more nectar—say 10 percent more. Instead of gathering 210 pounds merely, it will gather 10 percent more than 210 pounds, or 231 pounds. As it requires only 200 pounds of that for its own quota, it will store the other 31 pounds as surplus. That 31 pounds is 210 percent more than the former 10 pounds. So by increasing the efficiency 10 percent we increase the surplus 210 percent. In other words, by getting the bees to *gather* a tenth more, they will *store* as surplus a little more than three times as much.

If we operate with a colony storing more at the start, the figures will not be so striking. For instance, if we have a colony storing 50 pounds of surplus (being obliged to gather 250 pounds in order to accomplish this), and we then change queens so as to get it to gather 10 percent more, it will then have 75 pounds left for storage, or an increase of 50 percent. But although the proportionate increase is not as large as in the former case, the absolute gain is more, for we now have a gain of 25 pounds as against the former gain of 21 pounds. Similarly it will be found in all cases that the more our colony lays up in supers in the first place, the greater will the absolute gain in surplus be with an increased efficiency of 10 percent in gathering.

There are probably hundreds of cases in which the proper change of queens would increase the efficiency not only 10 percent, but 20 to 40 percent. Then there are other cases where the chance for improvement is less. Take a strain of bees that averages one year with another 50 pounds of surplus per colony, requiring the gathering of 250 pounds. Suppose a change of queens increases the gathering efficiency 5 percent. Then the bees will gather 12½ pounds more, and every ounce of that 12½ pounds will go to swell the surplus. So by getting the bees to gather only a twentieth more, we can put a fourth more money into our pockets.

"Well, what of it?" do you say. This, that if every bee-keeper realized fully what a large amount of increase in his crops would result from a little increase in the efficiency of his bees, he would make it one of his highest aims, if not his very highest aim, to improve constantly by every means in his power the gathering quality of his bees.

C. C. M.

Away Down South in Dixie

In September number of the American Bee Journal Dr. Miller criticises the bee-keeper who gives a report of his honey crop but fails to state whether the number of pounds of honey he got was extracted, bulk comb, or comb.

Yet in the face of it all, Mr. J. J. Wilder, in the Dixie department, this number, tells that his crop for the year will be two hundred thousand pounds. We happen to know that it is a *little* comb, a *little* bulk comb, and a *little* extracted. Yet if we did not know this, Mr. Wilder might well be excused for this little slip. Any man who can state that he has harvested two hundred thousand pounds of honey in a single season has a right to report it as he chooses, be it comb, extracted, strained, separated or what not.

Two hundred thousand pounds, nearly seventeen thousand gallons; enough to spread honey one-sixteenth of an inch deep all over a pancake made in a one-hundred-and-eighty-acre skillet—nearly seven carloads of sweetness. One engine could hardly pull it across the divide over into California, where the medium-sized bee-keepers are.

What is more, we are told in the same department that Mr. Wilder isn't through yet; just fairly begun. More out-apiaries are to be started, more skillets added, more cars filled. Hats off to Dixie and the man who is making it sweeter.

Decoy Hives

Very few if any of our readers are unacquainted with the practice of decoying ducks by means either of tame birds or of wooden decoys. Yet how many have ever thought of applying the principle to a swarm of bees?

We wish to call the attention of our readers to the article in this issue by Dr. A. F. Bonney, entitled "Decoy Hives." Although he modestly assumes that the veteran bee-keeper can profit but little by the description, yet we are inclined to believe that there are many, even among those, who do not realize the value of such hives scattered in and about an apiary. Swarming time is a busy time for the bee-keeper, and swarms are apt to be overlooked or allowed to escape in the rush of other apiary or farm work.

Aside from the fact that these decoy

hives may be the means of capturing swarms which would have made off for the woods, or of catching those issuing either from bee-trees or from some neighboring apiary, there is the added advantage that many of the swarms issuing will enter the decoys, easy of access, whereas otherwise they may cluster in the highest branch of the tallest tree, as is generally the case when the bee-keeper is the busiest.

In the fall is a good time to get these hives in readiness for the next season. Weak or queenless colonies are broken up or united now, and the poorest combs sorted out. These poor combs, if left in the decoy hives over winter, are practically immune to the bee-moth for a good share of the following summer; at least until the swarming fever is over. This applies, of course, to that section of the country where there is sufficient cold weather to destroy the moth and its eggs. In the South, the combs will have to be made moth proof in some other manner.

As an illustration of the efficiency of decoy hives, besides the one mentioned in Dr. Bonney's article, two California bee-keepers wrote of their experiences with these during the spring of 1912. One man caught 67 swarms in his decoys, while the other had increased his number of colonies by 34 in the same manner. On page 316, September American Bee Journal, Rev. Geo. A. Hood tells of an Illinois bee-keeper who put up 15 decoys and caught 13 swarms the same season.

In all probability the success is greatest where the vicinity is well supplied with bees. Most likely the percentage of increase in this manner will also be largest in a wooded country where modern bee-keeping is yet in its infancy; for in such localities the percentage of swarming is usually the largest, as is the number of colonies housed in bee-trees.

We recommend the decoy hive to all our readers. Get a few decoys ready this fall, *use old combs* as baits; the older the comb the better. Place the hives in and about your apiary, or out-apiary if you have one. Have them 10 feet or more from the ground in well chosen places, and watch results.

APIARY OF JOHN REID, OF GLASGOW, SCOTLAND

ANOTHER VIEW OF A SCOTTISH APIARY

White Clover in Europe

Mr. Crépieux, of Rouen, writes us as follows:

"In the American Bee Journal of August, page 258, you speak of my observations concerning white clover along the roadways. I have not said that the bees never went upon it, but only that the white clover of the roadside, which is here in rather large quantities, gives no *appreciable* quantity of crop. It is rarely that we see bees upon it, and when we do see them, the result is nil. I have sometimes traveled several kilometers without seeing a single bee upon it. The day upon which you came, the hive on scales showed a loss of 300 grams. That was the result of the work upon clover bloom that you witnessed."

We must acknowledge that all through France and Switzerland, as far as visited, the verdict is the same. The white clover, which is a good honey plant both in America and England, is not a honey producer on the European continent.

MISCELLANEOUS NEWS ITEMS

Ontario Buckwheat Honey Crop Report.—The crop report committee of the Ontario Bee-Keepers' Association met on Thursday, Sept. 4. to consider the crop of buckwheat honey. It was found that 252 members had reported 239,400 pounds from 10,463 colonies being an average of 23 pounds per colony. This is about the same average as last year, and the committee advises members to ask the same price as was obtained in 1912, *i. e.*, 7½ to 8½ cents per pound, wholesale, depending upon the size of package and the quantity sold in one order. No buckwheat honey should be retailed for less than 10 cents per pound.

The white honey situation is practically unchanged. A great deal of the crop had already been sold at prices recommended by the committee.

◆

Bee-Keeping at the Massachusetts Agricultural College.—Since bee-keepers are demanding more and more of the apicultural service at the Massachusetts Agricultural College, it has become necessary to increase the size of the apiary, and to carry on lines of work not originally contemplated. This normal enlargement of the plans is a pleasant expression of the interest in apiculture in northeastern United States. To meet these demands, Mr. John L. Byard, formerly of Southboro, Mass., and Deputy Apiary Inspector since 1911, has been appointed superintendent of the apiary, beginning Sept. 1.

Mr. Byard's life long experience with bees began with his father, a veteran bee-keeper and bee-hunter in Vermont. In 1888, Mr. Byard moved to Southboro, taking with him 5 colonies of bees, since which time he has maintained a large apiary, and has become widely known as an experienced and successful bee-keeper of the locality. He has also been active in the bee-keepers' associations of the State, having been president for three years of the Worcester County Bee-Keepers' Association. He is now president of the State Bee-Keepers' Association of Massachusetts. These activities, together with his extensive inspection work, has gained for him a large acquaintance with the bee-keepers, many of whom are indebted to him for encouragement and enthusiasm.

Mr. Byard's services will be confined largely to the maintenance of the apiary and its equipment. He will also assist in the laboratory and demonstrational work with the students, and at institutes and conventions. The appointment should afford services to eastern bee-keepers heretofore impossible to render.

◆

Adulterated White and Alsike Clover Seed.—According to the United States Department of Agriculture there is being imported into the United States from Europe a mixture of two kinds of seeds very similar in general appearance to a mixture of white and alsike clover seeds. The report goes on to state that "the seeds are slightly smaller than those of alsike or white clover, but can be easily distinguished under a magnifying glass by their rough surface as contrasted with the smooth surface of alsike and white clover seed.

"This mixture has no recognized commercial value in this country, and will doubtless either be sold as white and alsike clover seed or used as an adulterant of these seeds.

"Some of this seed has been imported at a price approximately one-half that of alsike and one-fourth that of white clover seed, and an attempt has been made to sell it as a mixture of white and alsike clover.

"All purchasers of mixtures of white and alsike clover seed should examine them carefully to see that they are free from this seed."

◆

Railroad Rates in Cuba on Honey.—According to the railway tariffs of Cuba, extracted honey at present takes second class rates. Mr. D. W. Millar, one of our correspondents in that country, is making an effort to have the rate changed to fourth or fifth class, as it is in this country.

◆

Exporting Honey from New Zealand.—The National Bee-Keepers' Association of New Zealand is at present exploiting England as a market for its extracted honey. Members may send samples to the headquarters of the Association. If satisfactory, the government grades the honey when it comes in. Then it is shipped out in standard cases, a large lot at a time.

The first shipments made in July will, in all probability, be enough of a success to encourage the scheme. Already cables from England have been re-

His First Experience. "Why, I supposed they would bite, but they don't."

"They are not so bad I think I'll get better acquainted."

ceived by the Association, which offered 9 cents per pound for extracted honey. This is a much better price than can be obtained in the local markets of New Zealand.

◆

European or American ?—Mr. J. Tinsley, writing in the Bee-Keepers' Gazette for September, says:

"For many years I have had a warm corner in my heart for Italian bees, but it is only during the last two years that I have used them extensively for experimental purposes in the treatment of foul brood and Isle of Wight diseases. During the last 10 years I have examined many thousands of colonies in all parts of the country, and I have never yet met with a case of foul brood where a pure Italian queen was at the head of affairs, neither have I known an Italian colony" with the Isle of Wight disease.

Our doubts about its being anything but the European variety are dispelled however, when Mr. Tinsley goes on to state further along in the article, after advising formalin as a treatment, that "if the cure is to be quick, dethrone the queen and introduce an Italian mother. I have seen diseased portions of the cells cleaned absolutely to make room for a prolific Italian queen. Her energy is wonderful, and she seems to exercise a magnetic influence in arousing the colony from its state of lethargy."

◆

Tarred Roads and Bee-Diseases in Europe.—A newspaper of the British Isles traces the abundance of Isle of Wight disease to the fact that many of the roads in that section have been tarred.

Too bad we haven't some explanation for European and American foul brood in this country.

◆

Prices High in South Africa.—According to the South African Poultry Magazine, the following prices were paid for honey by consumers in Johannesburg during July:

HONEY IN SECTIONS.	
13 oz	42c
14 oz	48c
15 oz	54c
16 oz	60c
EXTRACTED IN BOTTLES.	
8 oz	36c
16 oz	60c

◆

No Appropriation for Texas Bee-Keeping.—A recent letter from the Texas State Entomologist reads as follows:

> "The special session of the Texas Legislature which was in session during July and August, did not make any appropriation for the continuation of foul brood eradication work in this State. Accordingly we are without funds for continuing our fight on bee-diseases during the next two years.
>
> "We have an excellent new law on the subject of disease eradication which was enacted at the regular session of the Legislature last winter, but I fear we will not accomplish much with no funds to continue this work.
>
> "Wilmon Newell."

It is to be regretted that this appropriation failed to be allowed. With as live an association as Texas has, however, we have no doubt but that their efforts will secure the needed funds at the next meeting of their Legislature. Untiring and united effort is what wins.

◆

Iowa Bee-Keepers to Meet in December.—According to advice just received from its secretary, S. W. Snyder, the Iowa State Bee-Keepers' Association will hold its meeting in Des Moines, Dec. 10, 11, and 12.

Mr. Snyder is already arranging the program. From the enthusiasm at the meeting last year, and the interest displayed since, we have little doubt but that this will be one of the live meetings of the year. Particulars and program will appear in a later number.

◆

Clover Prospects. — The extreme drouth of the Central States has been broken during the last few weeks. Reports from most sections indicate considerable rainfall. Although clover has been damaged to no little extent by the dry weather, there is enough left in most of the Central States to indicate at least a fair growth for next year.

Missouri, Kansas, southern Illinois

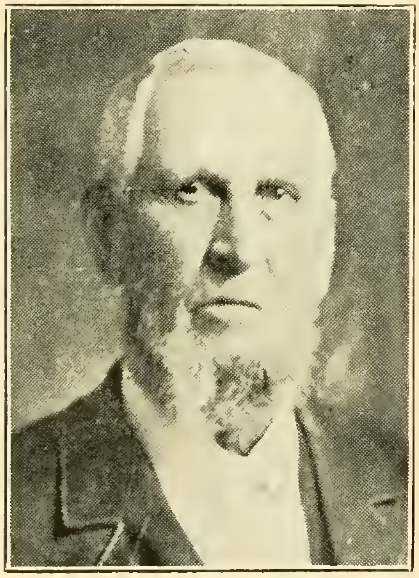
and southern Indiana seem to have experienced the greatest drouth. In northern Illinois and in Iowa the crop has been large and prolonged. In nearly all instances bee-keepers agree that bees are going into winter quarters in the best possible shape; plenty of good stores and lots of young bees.

◆

Death of William Bader.—On Aug. 6, 1913, at Oklahoma City, occurred the death of Mr. William Bader, age nearly 87 years.

Mr. Bader's early life was spent in Schuyler Co., Ill. He had much to do with the early history of this section of the State, and was well known; the town of Bader was named in his honor.

Although a very busy bee-man, Mr. Bader always found time for caring for his own bees and for helping others engaged in this industry. On one of his visits to the State of his birth, Ohio, he enjoyed a visit with Mr. L. L. Langstroth.



The Late William Bader.

The latter years of his life were spent in Oklahoma City. It was while caring for his bees there that he was stricken with paralysis from which he never recovered, dying within a year.

◆

Fires in California.—There have been very damaging forest fires in Riverside Co., Calif., late this summer. To one unacquainted with the California country; to one not familiar with the nature of the undergrowth in the sage country, it would seem that such fires could be easily kept within certain bounds. This is not the case, however, and it requires the efforts of hundreds of men to keep the fire from spreading. The writer recalls a short hunting trip in southern California. The quails were so thick that you could "knock them down with a stick," but, alas! the undergrowth was nearly impenetrable.

The Western Honey Bee comments on the fires as follows:

"Many erroneous reports have been published regarding the fire, but a trip over the 40 or 50 miles of devastated territory makes it plain that this is the worst fire that has ever visited this section of Riverside county.

"The fire running westward is confined to the heavy growth of underbrush, and will do a great deal of damage. Thomas Rawson, a bee-rancher, lost a large apiary in the fire this evening, and the residence of Mrs. Rosa Miller was burned, together with a large amount of hay and other products

"The fire will reach its worst tomorrow, when it is feared it will burn through the big cattle ranches of the Tripps, Bergmans, and Magees, and numerous other small ranchers living in the sage country. Year by year these fire losses are cleaning out the best of our old-time ranges, and it would seem that it will only be a question of time when the acreage of sage, sumac, buckwheat, wild alfalfa, etc., will be reduced to such an extent that the big honey production of southern California will be a thing of the past."

◆

Northern Illinois and Southern Wisconsin Meeting.—The meeting of the Northern Illinois and Southern Wisconsin Bee-Keepers' Association will be held in the Court House at Freeport, Ill., on Oct. 21.

All interested in bee-keeping are cordially invited to attend.

B. Kennedy, *Sec.*

◆

Illinois State Meeting.—The 23d annual meeting of the Illinois State Bee-Keepers' Association will be held at the State House in Springfield Nov. 5 and 6.

Prizes of $5.00, $4.00, $3.00 and $2.00 will be given for the first, second, third and fourth best articles of not to exceed 500 words. See page 83 of the last (12th) annual report, or write the secretary for particulars. No limit to qualifications.

The report of this meeting will go to make up a good part of our 13th annual report, so let us make it a good one. Further notice will be given to members. Jas. A. Stone, *Sec.*

BEE-KEEPING FOR WOMEN

Conducted by Miss Emma M. Wilson, Marengo, Ill.

What a Woman Can Do in Bee-Keeping

My son takes the American Bee Journal and keeps bees. He is not very well, and I would be glad to help him with the bees if I could learn how. He has a photograph gallery, but can work only part of the time as he needs fresh air.

I want to learn bee-keeping so I can help him in place of a hired man. Do women do much work with bees?

Kansas.

You may rest assured that not only can women do part of the work at bee-keeping, but they can do, and do, in many cases, all the work. The only danger in your case is that if you become interested and efficient at the work you may do so much of it that your son may be crowded out from the full advantage of the outdoor life that bee-keeping affords. But your maternal heart will look out for that.

There is a good deal of work, however, that is not necessarily done outdoors, and you could probably do all of that. Still, there is one thing outdoors that might naturally fall to your care as a matter of convenience. That is watching for swarms, provided you allow the bees to swarm naturally. You could have an eye out for that—or, rather, an ear open for it—and could no doubt break in upon your household duties at any time long enough to hive a swarm, while it might be very inconvenient for your son to do so during the time occupied at his calling. Like enough, however, he may prefer not to allow natural swarming to any extent, preferring artificial increase.

If you produce comb honey, you can do all the work of preparing the supers and sections, such work generally being done indoors. It can be done in winter or early spring, and in some respects that is the better time, for it isn't the nicest thing to put foundation in sections on a hot day when the foundation, soft with the heat, crumples under your fingers. When the sections are taken off, you can scrape them ready for market, and the deft fingers of a woman are generally better for such work than those of a man.

If you produce extracted honey, you can do the uncapping, or you can turn the extractor, and you can see to having the honey put up neatly in cans, jars, or whatever containers you use.

Whether you work for comb or extracted, you can do any or all of the work of putting foundation in brood-frames and getting the hives ready for increase.

Beside all this, there is a way in which you may be a very big help in a direction you may not have thought of. If your son is built like bee-keepers in general, one of the things that he greatly longs for is some one with whom to talk bees; some one who can talk intelligently about them, and especially one who can listen intelligently to what he has to say, and to discuss with him his plans. Even if you did nothing but this, and never touched a finger to the work, it would be worth a lot to him. To prepare you rightly for this, make a study of one or more good books on bee-keeping, such as Langstroth's. And if at any time you feel the need to consult some one of more experience than yourself, or have any inquiries to make about anything you come across in your reading, it will be a real pleasure to answer in the department for women in the American Bee Journal any questions you may have to ask.

◆

Look Out for Looks

The other day, at a county fair in a neighboring county, the first premium on comb honey was taken by sections that had never been scraped or cleaned in any way, but with all the bee-glue upon them, just as they were taken from the hives. That did not speak very well for the good taste and enterprise of—somebody. Let us hope it was not a woman, for women are supposed to average just a bit better in the matter of taste than the members of the sterner sex.

Whatever may or may not be the case as to the comparative eating quality of comb and extracted, the probability is that in a great majority of cases the consumer is willing to pay the higher price for comb just because of its looks. And the more nicely a section is cleaned the stronger the appeal in the matter of looks.

Some claim that it is better to have a section just as it left the hive, so that the purchaser may think it real honey made by the bees, and not an affair manufactured by man. Whatever may have been true in the past, in these days of pure-food laws there is no need to make such an appeal to the ignorance of consumers. Nor is it necessary to have wings or bodies of dead bees in extracted honey in order to show that it is genuine honey made by the bees.

Whether you produce comb or extracted, look out for looks.

◆

Observation Hives

What do you think of my putting a swarm of bees in an obersvation hive next spring? Will bees do as well in an observatory hive as in any other hive? What will such a hive cost?

(Mrs.) Belle Everett.

The probability is that an observation hive will be a source of much interest to you, and that you will thereby learn some things that you would not otherwise learn. It will never fail to interest visitors to be able to sit in a house and watch the bees at work without the possibility of danger from stings.

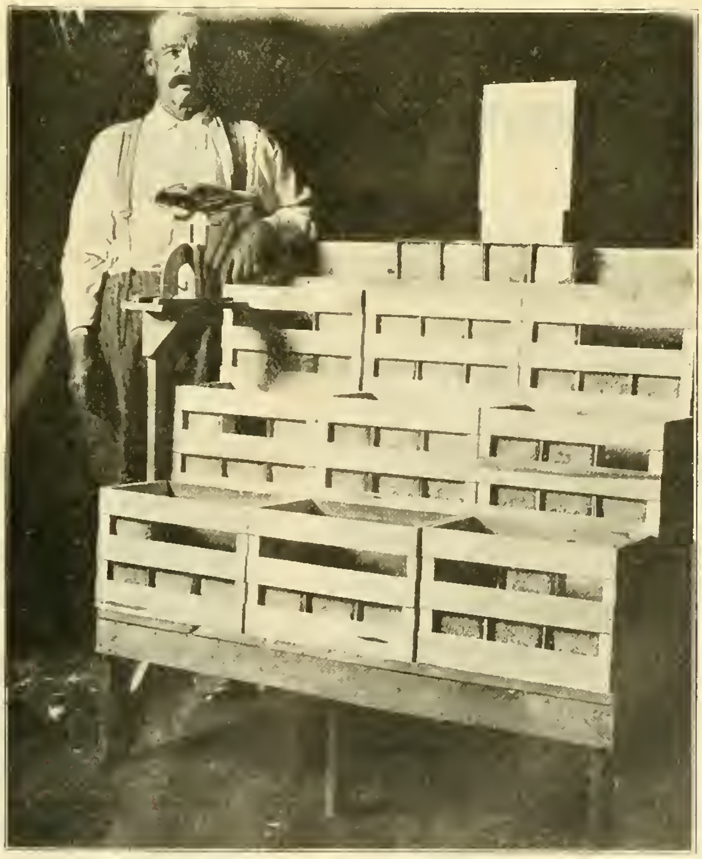
For $9.00 you can get an 8-frame observation hive, complete with super, including frames, sections, and glass on sides and ends, with shutters to cover the glass; the wood oiled and varnished so as to make an attractive piece of furniture. For $3.50 you can get an observation hive with one frame. Bees will do as well in an 8-frame observation hive as in an ordinary 8-frame hive. With only one frame, as you would naturally expect, they will not do so well, and the frame of brood must be renewed every week or 10 days. From that you will see that it is not an easy thing to keep the one-frame hive going through the winter, while some are quite successful in keeping a larger number of frames summer and winter.

While the hive with only a single frame is not a very permanent affair, the chance for satisfactory observation is many times greater than in a hive filled with 8 frames. With glass on both sides of the single frame, you can at any time see all that is going on at any part of the comb; and especially you can at any time point out the queen, for she is likely to be the central point of interest. With 8 frames you can see only the outer face of the two outer combs. Generally there will be no brood to be seen on these two outside faces, as they will contain only honey and pollen; so the queen will have no object in visiting them, and the work of the bees in caring for the eggs and larvæ can never be seen.

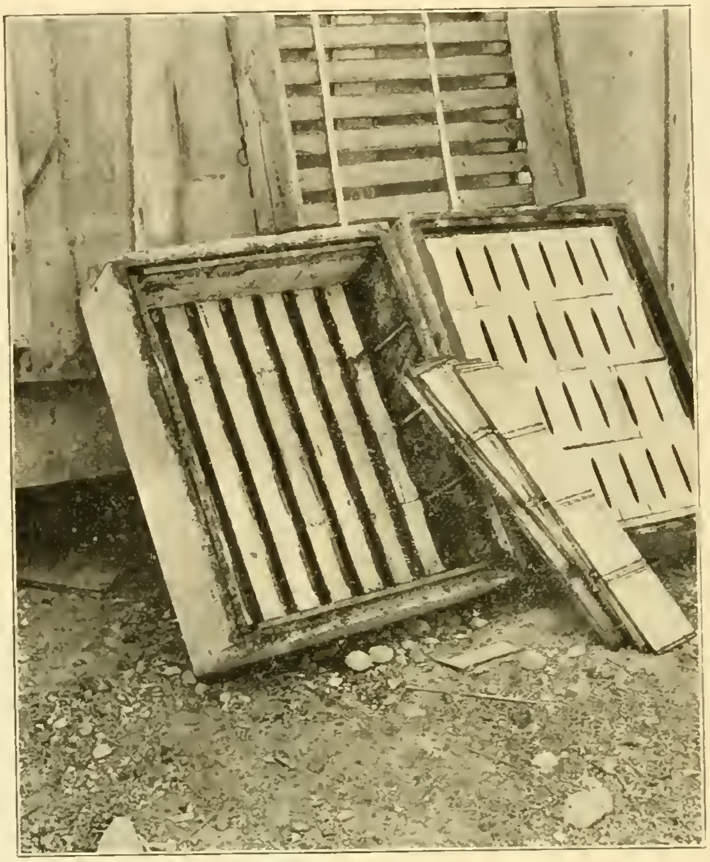
Possibly you may prefer to have one of your regular hives made into an observation hive. It is a very simple matter. Any mechanic can cut out nearly all of one side of the hive, and put in a large pane of glass, or you can have glass put on all sides, and there you are with a hive that will allow you to see about all that you can see with the more expensive hive.

On the whole, there is not so very much advantage in having glass on more than the one side. Then you can have only a single frame in the hive, or you can have any number of frames up to the full capacity. With a single frame in the hive you can see the one side of that frame, and if there is any special reason for seeing the other side, as for instance the construction of a queen-cell on that other side, it is an easy thing to turn the frame end for end. Then if you wish you can have two frames in the hive, giving you still an excellent chance for observation, while allowing the frames to last without renewal much more than twice as long as with a single frame. From that you can increase the number of frames as you wish; each increase making the colony more permanent, but lessening the chance for observation.

Of course a dummy or division-board must be in the hive when it is not filled with frames, and a board or cloth must cover the glass when not under observation, for bees do not like to have constant exposure to the light. Your hive still remains available for use in the apiary the same as in any other hive. Indeed, for your own personal observation, you may prefer to keep the hive in the apiary, running it only through the warm season.



E. D. Nichols and his comb-honey packing stand, grading rules on board at top, sample sections in rack below. Like honey is packed together correctly,



Home-made Supers of Mr. Nichols

FAR WESTERN BEE-KEEPING

Conducted by Wesley Foster, Boulder, Colo.

With a Progressive Bee-Keeper

I recently spent a very pleasant day with Mr. E. D. Nichols, of Montrose. His home is several miles below Montrose, and is a homestead under the Gunnison tunnel irrigation project. He has a very pleasant home with bath and hot and cold water. The obstacles in the way of having these conveniences would have discouraged many a man, but Mr. Nichols has proven that he can make some things go that others think hardly possible. He has demonstrated that a bee-keeper can successfully rear good queens by the most approved methods and produce a crop at the same time. Most of his bees are at his home yard, and a very neat and well cared for apiary it is. He has a far better shop and honey house than the average bee-man, and gets his shop work done with dispatch because of having things well arranged.

A gasoline engine runs his saw and extractor. One soon realizes what a convenience a saw is when the various appliances Mr. Nichols has made are seen. He has made every part of a bee-hive, but I do not think he practices making all his supplies now. Only those supplies that he can economically make are sawed out, the rest he buys.

By looking at the illustrations you can realize that Mr. Nichols is determined to have things so he can get his work done well and on time. His honey crop was a fair one and of good quality. He had already harvested it when I visited him in August.

Fall Conditions in Colorado

The honey-flow has lasted well into September in northern Colorado, which is unusual, as in ordinary years Aug. 15 to 25 sees the close of surplus honey storing; in comb honey supers at least. But this year the bees have been busy on the alfalfa later, and while the nights have been too cool for comb-building, what supers were well stored will nearly all be finished. The bee-keeper who has many unfinished sections this year in the northern district, is not the bee-keeper he should be. The honey-flow closed earlier than usual in the Arkansas valley, about Aug. 20, finishing the alfalfa surplus. Sweet clover was nearly through blossoming by Aug. 25, having seeded heavily, so that what honey has come since then has been alfalfa. While alfalfa has yielded well, the rosin weed had little attention from the bees.

Many bee-men have utilized this late flow by taking one or two combs of honey from the brood-chamber and filling in with full sheets of foundation or drawn combs. This has been a very favorable year for such a procedure, as September has been warm enough for drawing comb and storing honey in the brood-chamber, though little could be done in the surplus chambers above.

In many of my hives the extracting supers and full-depth supers with full sheets of foundation put on above have been unoccupied, while the combs pu in the brood-chamber have been quick

Apiary and Home of E. D. Nichols, at Montrose, Colo.

filled with honey and brood, and the full sheets have been drawn into combs in a very few days.

Wintering should not be a serious problem this year, as the quality of stores is good, and breeding has been above normal since the main flow waned in late August. Early in September I had many colonies with brood in every frame. These were 8-frame hives, however. It was not true of the 10-frames.

The third growth of alfalfa has furnished nectar this year, which is unusual. When alfalfa seeds well you can count that it also furnished honey.

Mr. Nichols' Separator Cleaner. See the railroad iron on top to give pressure to the cleaning knives.

SOUTHERN BEEDOM

Conducted by Louis H. Scholl, New Braunfels, Tex.

Cleaning the Shallow Bulk Comb Honey Frames and Extracting Combs

"What do you do with your frames after cutting out the honey? Mine always have more or less honey 'messed' on them. How do you manage to get rid of this sticky condition when the time comes to put foundation in them again? Also with the wet extracting combs, do you do anything with them or just let them alone? Last year I filled my supers out in the yard and let the bees clean them, but it caused an uproar. My bees are too near the road for that. My supers are all stacked in my honey-house with the wet extracting and bulk comb honey frames in them. Will it do to let them stay that way?" Porter C. Ward.
Elkton, Ky.

There are various methods of disposing of frames employed by different bee-keepers. Our method is as follows: After the comb honey is cut from the shallow frames, in the comb honey house, another person with a somewhat dull knife scrapes the remaining comb and honey, together with the bur or brace combs, off the wood into a strainer tub. The honey is drained from these comb scrapings which then go into the solar wax-extractor. The scraped frames are then hung back in the supers, which are taken out into the back yard and stacked up. They are closed bee-tight except for a very small opening at top and bottom through which bees may enter almost singly and remove what little honey remains on the frames.

In scraping the frames, close attention is paid to get the underside of the top-bar smooth and clean, so that the sheets of foundation that may be put in later will fit snugly to the top-bar. The rest of the frames, on the inside surface, need not be cleaned so particularly, as the bees will build the subsequent combs back to the wood again. In fact, it is an advantage to have the combs attached to the wood where the comb honey is hauled many miles to the packing house from the yards. The outside of all the frames should be scraped clean, however, so that there may be a minimum of bur combs built. When these are numerous they prove a nuisance, as they prevent rapid handling of the comb-honey supers, and also result in mashing many bees. When these bur combs are filled with honey, as they sometimes are during a good honey-flow, the broken honey makes things disagreeable. Such a condition also often results in stirring up robbing, and hence should be prevented, if possible.

If it is desired to put foundation in the shallow frames as rapidly as the honey is cut out, all the frames, after they have been scraped clean, are washed off by plunging them up and down in a large tub or vat of water. After being rinsed off they are thrown out and scattered to dry, being careful not to leave them in the hot sun any length of time, as it may twist and warp the wet frames into all kinds of shapes. When dry they are hung back in the supers, and are ready for the foundation sheets. Without the washing they are very sticky, and it is disagreeable to handle them when putting in the foundation sheets.

The shallow extracting combs are placed back into supers as they come out of the extractor. The supers are then taken out into the yard, preferably some little distance from the apiary, and stacked up in high piles, the same way as we do with the shallow supers with the frames from which the honey has been cut. Very small openings are left at the bottom and top of each stack of supers, being careful that these are so small that only one bee can pass at a time.

By this slow method of having them cleaned out there is little danger of the usual uproar, and besides the combs are not likely to be damaged by the bees. After they are clean and dry they may be set back on the colonies needing them, or if it is late in the season they may be removed to the storehouse for winter. Care must be taken, however, that they are closed tight enough so that mice may not enter and destroy the combs. It is not customary to store extracting combs here in the South, but these are kept on the colonies during the winter; sometimes four and five of them piled on one colony.

It is a mistake to pile the wet supers of combs or the besmeared frames in supers anywhere the bees can have free access to them. The uproar caused by the bees is not only disagreeable, but the bees may cause trouble by stinging people. This is especially to be guard-ed against when the apiary is located near a thoroughfare or a highway. Aside from these dangers there is always more or less disaster in the apiary. The demoralization has a tendency to wear out bee-life to a considerable extent, and consequently leave the colonies in a weaker condition. This is more apparent in the late fall, especially when there is no honey coming in, and thus the colonies may go into winter quarters in an unsatisfactory condition and result in bad wintering. Many weak colonies may be robbed out entirely before the apiarist discovers the trouble.

Where we can safely do so, and that is any time when some honey is coming in so that bees are not inclined to start robbing, we place all our extracting supers with the wet combs right back on the hives. This is done at dusk, however, and reasonable care is taken to have the outside of the supers clean by having been rapidly washed off with a wet cloth as they are removed from the honey-house. Put on at this time of the day it gives the bees a chance to clean up and get over the first excitement. By the next morning they will have quieted down sufficiently to guard the entrances, and there will be no trouble about robbers molesting any but very weak colonies. Indeed, no weak colonies should receive such supers of combs. It would be better to first place several of the wet supers on the strongest colonies, and then remove them to the weak colonies as needed, after they have been cleaned.

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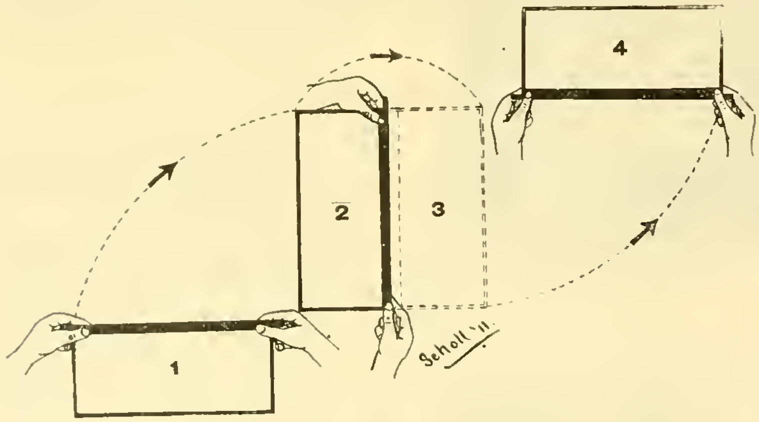
Handling Fragile Combs of Honey and Brood

When examining newly-built or other combs that may break out easily, especially during warm weather, we practice handling them as illustrated herewith. The method of the different passes is self-explanatory as shown by the figures.

The trick of handling all combs in this way soon becomes a kind of second nature to the operator, and prevents many disagreeable mishaps to combs. When the comb is removed from the hive the surface in front of the operator is examined first. Then an upright swinging motion is made by the left hand, raising the comb into a vertical position, at the same time twirling the bottom-bar around to the right of the operator, as shown in No. 3. Bringing the right hand up, the comb is before the operator upside down, and the opposite side from that already examined is before him for inspection. When returning the comb to the hive, the exact reverse motions bring it into place. Care should be taken not to tilt the combs sidewise, but at all times during the operation to keep them on edge.



Scholl's Method of Handling a Frame.

CANADIAN BEEDOM

Conducted by J. L. Byer, Mt. Joy, Ontario.

Results of Moving Bees—Wintering

The readers of the American Bee Journal may remember that I moved 240 colonies of bees last May over 250 miles by train, and that I promised to give a picture of the bees in their new location. The views given were taken during the honey season. This fall 380 colonies will go into winter quarters all in one yard. They are to be wintered outdoors even if the location is 100 miles north of Toronto. Picture No. 1 shows most of the bees that were moved in two cars in the spring, and No. 2 shows the lot that were wintered outdoors last winter, and where they are now.

There is often much discussion as to the merits of wintering outdoors and inside, and while seasons differ much in this respect, there is no question but that last spring, bees that were wintered well outdoors, outstripped cellar-wintered bees in the storing of surplus. The season for clover about this yard was very short on account of late spring and frosts badly damaging the clover. Then a prolonged drouth followed, with the result that it was badly stunted and soon dried up. Picture No. 1 shows all the colonies with but one super each; a few in the back row having two, while one has three. The other view shows nearly all with two supers, while many have three—both pictures were taken on the same day. The bees from the east that were wintered inside, while in good shape in the spring, were about ten days behind the other lot, and when they were in shape for the honey-flow it was already nearly over.

The other picture shows the motor boat we have on the river near this apiary, my father being seated near the end of the boat at the right side. This boat has been very useful. Any one situated near a navigable river, in a good honey location, would have an ideal place for running out-yards. Unfortunately the river is not navigable east from our apiary, and it is only 2 miles west to the apiary, so we cannot establish out-apiaries to be visited by boat. We are situated 5 miles from the nearest town, and this town is on the stream near the apiary. The boat comes in very handy for hauling groceries and other supplies, for the helpers there do their own cooking and general housekeeping. The boat gives many hours of recreation after a day's work, when they get time to go on the water for a few hours, incidentally doing a little fishing.

A few days ago my father went up the bay some distance, and with the help of another boat, towed some 5000 feet of lumber in a raft down to the yard, said lumber to be used for making winter cases. All things considered, where the navigable waters are at hand, this means of conveyance has an automobile beaten, as the question of roads does not bother the boat, and on this inland stream no storms are ever of a serious nature. The boat illustrated is 24 feet long, and has a 3-horse power engine. It will run 8 miles an hour, and if we ever desire more speed, a larger engine can be put in any time, as the hull is heavy enough to accommodate one of 7 or 8 horse power easily.

◆

Brood-Chambers Well Filled

We are busy (Sept. 10) extracting our buckwheat honey. In our locality, owing to prolonged drouth, the crop is short and will not average over 25 pounds to the colony. Last fall the brood-nests were very light, and the feeding bill was heavy, but for some reason this fall the reverse is the case. While the surplus is not great, the very heavy brood-nests are pleasing. In fact, I have not had the brood-nests so heavy in years. The honey in them was all gathered during the hot, dry weather, and I have no fear of leaving it for wintering.

Judging from letters from different parts of Ontario, this condition is general, and it looks as though much less sugar will have to be fed than last fall. While colonies invariably winter well when fed heavily on sugar syrup, I am always pleased to see the hives well filled with natural stores, so that feeding is avoided. In years like the present, when all the honey is well ripened and sealed, I prefer the natural stores to sugar, especially in the spring, if we have spells of cold weather with no pollen coming in.

The Honey Market

At present the honey market is dragging. Peaches and other fruit are abundant, and the very tight money market is no doubt somewhat influencing the western trade. Personally, if I had much honey unsold I would not sacrifice it at a lower price than ruling quotations, but would wait for later sales, as I believe conditions will improve. Some have cut prices. This makes buyers hold off in the hope that others may do likewise. Other crops are splendid, and I think we can expect a better demand from our western trade when farmers begin to realize on their produce. The existing situation forcibly reminds us that as bee-keepers we lack system in marketing. With proper distribution all the honey in Ontario could be placed at once at reasonable prices.

The Direct Plan of Introducing

Further trials of the Arthur C. Miller plan of introducing queens have given uniformly good results, and it looks as though we have a good thing in the way of a simple and reasonably safe plan of introducing queens, while at the same time all danger of foul brood being given to a colony, through the medium of infected food in the mailing cages, is avoided. Just here I might remark that the one I let get away from me at the entrance of a hive "never came back," and to be real sure of not repeating the trick again I now remove the queen from the mailing-cage and place her in a wire-cloth of about an inch in diameter. In this way one can see the queen at all times, and there is no trouble in getting her safely in at the entrance of the colony.

No. 1.—Two Carloads of Bees

No. 2.—The Bees Which Were Wintered Out-of-doors.

BEE-KEEPING IN DIXIE

Conducted by J. J. Wilder, Cordele, Ga.

A Good Season

This has been my biggest season. We have had to work in a great rush nearly all the time to keep up. The general foreman of all my bees has put in his appearance at "headquarters" but once since February, and only remained a short time then.

I saw him once since at one of my Florida apiaries. He came while I was there, shook hands, examined the apiary, and went on. "I will stay right with the bees and see that they do not lack attention; the harvest will be great," he said. He has had a broad field to cover, and has worked nearly all the time from daylight to dark.

The harvest *has been* great. Packing and shipping has been going on for some time, and yet the honey taken can hardly be missed from the hives. If we do not tip the scales at 200,000 pounds of honey, at least we will not miss it far. Nearly all the honey is No. I or fancy.

I can include my name in the list of happy bee-keepers. I am proud of my calling (bee-keeping).

Opportunities Pass On

A traveling man once described the enterprise of a certain little progressive town. When he got off the train he noticed a sign on a restaurant, "Open Day and Night." On the opposite corner was an eating place with the sign, "We Never Sleep." He looked in another direction and saw a Chinese laundry. Here the sign read, "Me Wakee, Too."

This town was in a new and very fertile section, and the inhabitants knew that opportunities awaited them. They were awake, seizing each opportunity as it presented itself.

The average bee-keeper is so situated. If he falls asleep the opportunity will escape. I know of more than a score of bee-keepers surrounded by good territory for bees, who, if they would stock even a part of the adjacent country, would get returns which would make their life much easier.

I sincerely hope that each season will see a greater awakening, among the bee-keepers of Dixie at least, and such an awakening is bound to occur if we follow the motto as it read over the Chinese laundry, "Me Wakee, Too."

Planning

After a good season, such as we have had, when one is feeling elated over his progress, is a good time to start planning for next year. If we plan now for next season, we will be ready for the rush when it comes, and our plans will be easily put into practice. Do not think of failure for one moment, but keep your aspirations far above even the chances of failure.

I have endeavored, and am endeavoring, to have a plan in all my work, especially in apiary work. The amount of increase to be made at different apiaries, together with all other needed changes for next season, have already been mapped out. Papers of instructions will be finished and turned over to the general foreman very shortly. He will see that all the needed supplies, etc., are gotten and put in readiness. When the time comes for putting the plans in operation, things will be easily, quickly, and well done.

Dixie's Climate and Opportunities for Bee-Keeping

In point of climate there is perhaps no section of the country so greatly blessed as ours. The Blue Ridge mountains afford great opportunities to those who wish to live in a cool, high altitude, and enjoy the fresh mountain air and the pure sparkling water as it gushes from the mountain side. They can also enjoy the delicious fruits, such as apples, peaches, grapes, plums, etc., which are grown in the valleys. Also, those who desire may live in a warm climate of low altitude, where there is no frost, and the weather is sunny and balmy during all the winter months. They may enjoy the delicious semi-tropical fruits, such as orange, tangerine, grape-fruit, etc.

No country can be more ideal in point of climate. But what about the opportunities for bee-keeping in this country? Perhaps no country has as great a variety of surplus yielding honey-plants as ours. If it is desired to make bee-keeping a sole business, it can be done almost anywhere with a little capital invested in bees properly cared for.

I have just returned from a trip through the Blue Ridge mountains, and was surprised to find so many different kinds of honey-plants there. The mountains are not barren, but are covered with a dense growth of trees and shrubbery. The greater part of the forests consist of honey-producing trees, such as chestnut, chincapin, locust, sourwood and poplar. There are also fruit-trees in the valleys, and asters all over the waste land. The asters are the last blossoms giving a good flow for winter stores. I was also surprised to find so many bees scattered over the mountains, and to know that they did so well. The honey is of fine quality; but modern hives, conveniences and methods are almost unknown to those mountaineers. The cut shows a mountaineer, his apiary, and corner of his apple orchard, the trees of which are laden with fruit. This place is located in a narrow valley on the side of a mountain.

The Motor Boat Used by Mr. Byer.

CONTRIBUTED ARTICLES

Points in Cellar-Wintering

BY DR. C. C. MILLER.

I SUBMITTED to Dr. E. F. Phillips what I had written about cellaring bees, and am glad to give some interesting comments from him, with some added comments of my own. Dr. Phillips' words are given in quotation marks.

"If outdoor wintering is preferable, if optional, why not plant an evergreen windbreak? Landscape gardeners have long recognized the advantage of evergreens over a solid windbreak, and bee-keepers are finally learning the same thing. Furthermore, don't we put our bees in the cellar to give them protection chiefly against low temperatures, but also against wind? If cellars do not afford this protection, doesn't this argue for a defect in our cellars for which there may be a remedy?"

Yes, evergreens would likely solve the problem, or even deciduous trees in sufficient number, as in large orchards.

Cellars do afford protection against wind. If they do not against cold to a sufficient degree, we have the remedy in heating the cellar.

"In determining the optimum cellar temperature, a wide range of temperature should be tried. Assuming that 45 degrees Fahr. is best, a bee-keeper who tested temperatures from 32 degrees Fahr. to 40 degrees Fahr. would never get it."

"In your discussion you use the word "quietness" as applying only to sound. Perhaps the absence of motion is more important. Bees can be working hard to produce heat with little noise, and after all it is work we are trying to prevent."

Certainly it is the motion of the bees that is important. The noise is only an index of activity. But I have always supposed that in the cellar the noise of the bees was exactly in proportion to their activity. And certainly the noise is the only thing I have to gauge their activity. I cannot see them; only hear them. If you say "bees can be working hard to produce heat with little noise," and at other times working not so hard but with more noise, I'm ready to take your word for it, but it will be something of a wrench.

"In your observations on temperatures at different levels, the thermometer placed on the top of a hive was doubtless influenced by the heat from the colony, and did not therefore record exactly the temperature of the air at that level."

Your idea is that the thermometer was affected by the direct conduction of heat from the hive-cover. There was less of that than you might think. The cover was one with a dead-air space, so a very poor conductor. I don't know, but I suppose that very nearly the same difference would have shown if the thermometer had been entirely isolated from the cover. Would not the air be slowly rising with the heat of the hives, and would not each hive add its quota of heat? But most surely the thermometer should have been isolated, which shows

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A Typical Apiary in the Mountains of the Southeast.

I'm somewhat raw in the matter of experiments.

"The greater difference between upper and lower temperatures when the cellar was closed was doubtless due to the absence of circulation of air."

"I doubt whether the absence of mold on combs is influenced by light in the cellar. Your cellar is exceptionally dry, and I should expect this to be the important factor since the combs in a hive are certainly in a dark enough place for mold to thrive were other conditions right for its growth. The inside of a hive outdoors is dark enough for mold to grow."

I interviewed, separately, three experienced house-keepers, asking "What causes mold?" Two of them answered, "Dampness." The third said, "Dampness and heat." Neither said a word about darkness. I don't know as much as I thought I did.

"Why do bees consume more stores at higher temperatures? I find this statement in "Fifty Years," and also in this article and that is something which does not harmonize with our theories (may be the theories are wrong). I should like to have you present the data available on this point as it is one of great importance, and has not been generally claimed. In your experience of 1902-3 (page 316, "Fifty Years"), the bees were kept outdoors until Dec. 8, and doubtless consumed stores rapidly before you took them in. Mr. Demuth says the spring of 1903 began warm, and bees reared brood abundantly. (See Gleanings editorial for 1903, page 375.) It then became quite cold, and the bees died rapidly. (See also editorial in Gleanings, 1904, page 432.) Has this greater consumption continued since 1903-4? What about the quality of stores during the two winters, 1902-3 and 1903 4? If by chance they were partly honeydew or otherwise inferior that might account for increased consumption."

Dr. Phillips, you ask too many questions. And you make them too hard. I supposed I was entirely orthodox in assuming that when the point of greatest quietude was found, any rise above that temperature was followed by a corresponding increase of activity, and consequently by increased consumption of stores. When the cellar becomes very warm, the bees become very noisy. That is one of the times when the activity of the bees cannot only be heard but seen. They are all stirred up and run all over the hive. Is it not generally held, at least of late years, that bees consume more stores in the South than in localities not too far up in the North?

As to whether the greater consumption has continued since 1903-4, it is a hard thing to be positive about the amount of stores consumed. I have no exact data, but I feel pretty sure that it has continued, and that last winter, 1912 13, the bees consumed as much in stores as in any former year, and they wintered in fine condition. So far as I know, stores and conditions were all right, only it would have been perhaps better if the cellar had not been quite so warm.

I do not know that my bees have had any honey-dew in winter since the furnace was put in.

Marengo, Ill.

Notes on European Bee-Keeping

BY C. P. DADANT.

We have now been two weeks in Switzerland, and I am writing this letter on the desk of our good friend Mr. Gubler, editor of the Bulletin D'Apiculture, who is also the manager of the Orphans' Home of Neuchatel, and has some 50 boys in his care. The Home is a country farm at the foot of a mountain, in a delightful spot, within less than a mile of the Lake of Neuchatel, a beautiful blue sheet of water some 25 miles long. Here is also an apiary of some 60 colonies, run for honey production; extracted honey of course. There is no demand for comb honey, and a school teacher of Mont, who has three large apiaries, told me the other day that section honey was difficult to sell on account of its higher price. Since the cost of production is greater on comb honey, they cannot afford to sell it as cheaply as the other, and the economizing Swiss consumer prefers to buy the extracted honey.

It is most probable that the reason of the preference here of the Swiss bees over the Italians, lies in the difference of the climate. One can readily perceive a most striking change, even in a few hundred feet within Switzerland. For instance, the road from Geneva to Lausanne and beyond, along the sunny shores of Lake Leman, is surrounded on all sides by vineyards, in shelves one above the other as far as the eye can reach. A few miles beyond Lausanne the railroad line to Berne turns northward and crosses the tunnel of Cornallaz, 1617 feet in length, and you find yourself on the opposite slope of the mountain, among pastures and woods without a trace of vineyards. It is too cool there for grape production. However, apiaries abound in the villages and by the farm houses; not large apiaries, but clusters of 2 to 10 hives; all modern frame hives; sometimes sheltered in a house apiary, but oftener simply protected by a tinned roof.

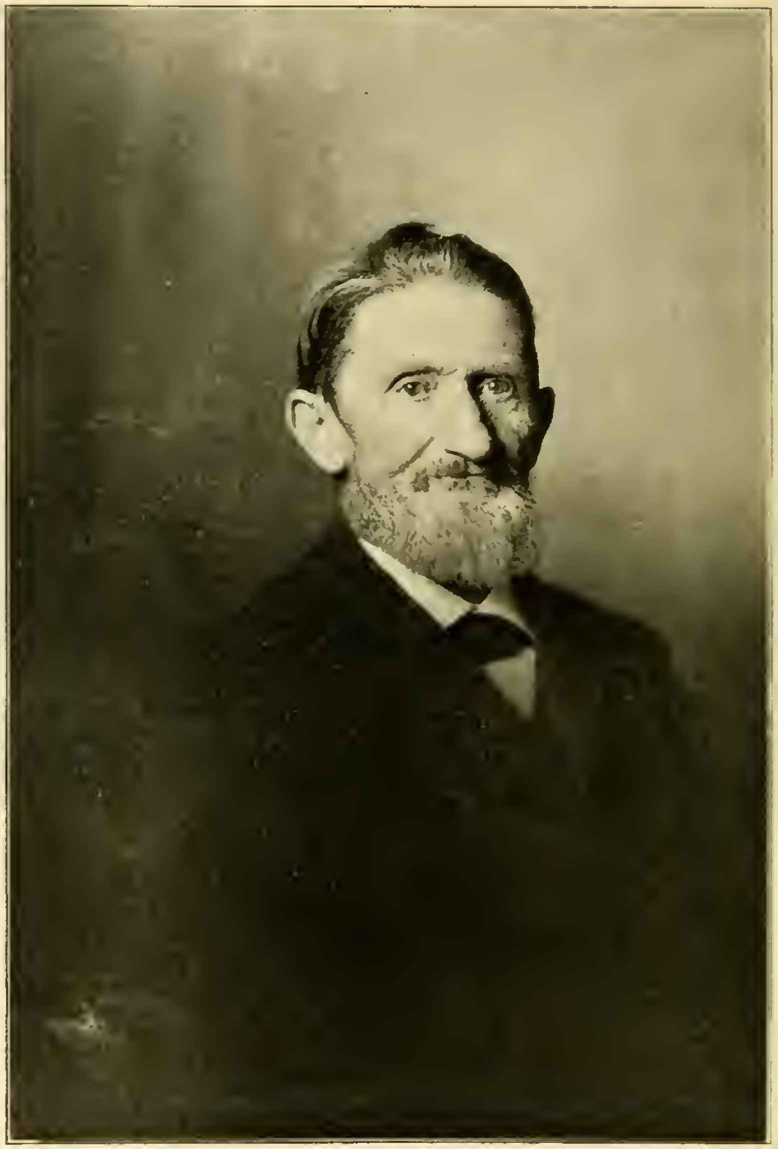
Those Swiss bees are accustomed evidently to the cool climate, and are more careful than the Italian bees, who, I am told, start too early for the field and remain too late, thereby often falling chilled to the ground not to rise again. Here, at Boudry, at this warm period of the year, the middle of August, I have been able to go about in such clothes as I wear in Illinois in November. Often in the evening, about sunset, a cool breeze, which they call the "joran," blows suddenly from the mountain, and would appear to us Americans as a decided indication of a morning freeze. But no frost comes, and the next day is again pleasant.

During the two weeks past, we have been visiting slopes, from the warm vineyards above mentioned to the snow peaks that never lose their white coat. Mr. Bertrand, former editor of the "Revue Internationale," who has entirely retired from active life, invited us to his home in the mountain, at Gryon, and we spent 3 delightful days there. I have forwarded a view of his chalet, which will appear in the Bee Journal. From there you can see the snow peaks above and a village beneath your feet, with the public road looking like a slender white thread through the green. The houses are mainly built of pine wood, which is never painted, but allowed to season in the light and become of a dark chestnut color. The roofs extend 4 to 6 feet, and even more, so that the eaves shelter the sides of the building from the weather, and porches are often built all around, with a balustrade well sheltered from the rain. The red til eroofs of a village make pretty spots in the pines, when you are a mile or so above them.

We are to attend a bee-keepers' meeting this afternoon, and I will have more to say by and by. Apiaries are generally small, but bee-keepers are numerous, and the bee-associations of Switzerland number over 10,000 members. There is no doubt that they are a progressive nation. They have many improvements which we are only beginning to consider in America. A very important one is the State Fire Insurance. No house is permitted to to be built unless a stone stairway is made to the upper stories as a life protection. Have we ever thought of such a safety precaution in America?

Switzerland, in the summer, is a wonderful tourists' resort. They are there by the hundreds of thousands, from all parts of the world, and it is a Babel of tongues, among which German, French and English are most prominent. Everywhere are large hotels, and every spot is arranged for the convenience of the travelers. In every hotel honey is served for breakfast. I am told much of this honey is artificial. In every instance but one, however, I believe we were furnished with the pure article.

The honey crop is very small, and the price is high. Fruit is a failure, both in France and here, owing to the late frost in May, which appears to have been very general over central and western Europe. America is not the only country to have reverses of temperature. But it is never so cold here, nor so hot, as in Illinois.



Mr. Ulrich Gubler.

VISIT WITH MR. GUBLER.

We have now left the hospitable roof of the Boudry Orphans' Home to continue our trip. It would be impossible to express the hearty feeling which this visit left us. Aside from the pleasure of meeting nearly a hundred bee-keepers of the Neuchatel Association, and being present at a banquet in our honor, we have spent with Mr. Gubler several pleasant days.

This man, who is nearing his 78th birthday, has for some 40 years been the manager of an institution which has proven its great usefulness. Many grown men, who are now filling useful positions in the vicinity, have been pupils of the Home. The owner of the apiary where the meeting was held, and who has in connection with his bees a large vineyard and all sorts of fruits kept in the very best manner, was a pupil of Mr. Gubler.

One would not look for very modern ideas from a man of 78. Yet Mr. Gubler is one of the most progressive thinkers I have ever met. On the way to an apiary owned by a Mr. Bonhôte, to which I will again refer, he showed me, on a height, a beautiful spot overlooking the lake. For a long time this spot, which is now covered with beautiful villas, was neglected. In the middle ages the gibbet was kept there, and long after the disappearance of this ugly sign of human cruelty, the spot retained an unpleasant renown.

But now it is forgotten, and our good friend expatiated on the difference in methods of rendering justice between the long-ago and the present. Not only were many criminals put to death, but they had placed the gibbet on the most conspicuous spot, with the mistaken idea that this frightened the criminals. Now the capital punishment is abolished in that region, and crimes are almost unknown. But even where capital punishment is still existing, society is so ashamed of it that the execution of criminals is carried on in the strictest secrecy. It is hardly within the province of a Bee Journal to mention these subjects, yet I cannot refrain from saying that the Boudry Orphans' Home, as it is conducted in the open country, half a mile or so from the city, with all sorts of outdoor occupation, such as farming, grape growing, horticulture and bee-keeping, is saving many waifs from a life that might have led them to crime; since orphans without means and without guardians would be in the worst possible conditions of life.

The apiary of Mr. Bonhôte, mentioned at the beginning of this article, has given me, better than a month of research, a clear idea of the difference in conditions between a country like Switzerland and our own. This apiary is located in a house, with openings on all four sides. Mr. Bonhôte keeps very complete and accurate records of all his crops and of each colony. From his records for 10 years past, it is evident that the hives with entrance on the north of the building are the most successful. The reverse would be the case with us. But in America, in Illinois at least, when a warm day comes, the bees are usually able to return home, after taking flight. In Switzerland many sunny days are so chilly that the least cloud before the sun causes the bees to perish, if they have ventured out. Thus the colonies which face north, and which are not readily lured out by a ray of sunshine, manage to save their bees, while their better exposed neighbors lose them.

In the climate of Switzerland, the great quality of the Italian bees to rise early and take flight proves a disadvantage. The common bee, which is more accustomed to the climate, ventures out less readily and succeeds better. So we may be sure that our Italians are not to be condemned.

Orphelinat de Belmont, près Boudry

The Orphanage Conducted by Mr. Gubler.

ZURICH.

The farther I go the more I am convinced that our American apiarists are on the right track in seeking to keep the Italian race pure. But I should not pass full judgment until I see them in their own country, and that will be next month.

Bee-houses, such as they have here, would not do in our country. The work is too tedious in them. However, there are some very positive advantages. Yesterday, on the heights that overlook this large city, we visited an apiary which consists of two rooms, one for the bee-hives, the other for the implements. The owner gave us a very clear idea of what comfort it is, on a rainy day, and they are plentiful in Switzerland, to be able to extract honey or feed the bees without putting a foot out-of-doors and without fear of any robbers. Those are comforts which we cannot claim. But our methods are so much more expeditive that we can well forego the pleasure of rainy-day work.

Tobacco smoke is used very generally, and I have been entirely cured of the idea that tobacco irritates the bees. In nine cases out of ten, I have seen the apiarists light only a cigar as a smoker. I have used a veil only twice, and have never been stung except when I accidentally crushed a bee in handling frames. The hybrids which are so cross in America usually, appear as quiet here as the others, and I am astonished at the steady ways of the latter. They do not rush about on the combs as they do with us; and, in fact, behave very much like our Italians. However, they do not cling so tenaciously to the combs, and, in several instances, I have seen them fall to the ground.

The Carniolans are well spoken of wherever tried, but the unanimous verdict is that they swarm too much. That is a great objection for our practical apiarists who already have as many colonies as they want, but it does not seem to be an objection in German-Switzerland.

I am writing in rather a hurried way, for we go from one place to another every other day; but I am taking some notes, and will go over the subject again soon. I want to mention the men whom I have met, and show their faces to the reader. I will also mention some of their implements, which are like their roads and their houses, made to last and endure service.

WITH MR. BERTRAND.

Dear reader, we would like to tell you at once all the experiences of our trip. But we have only 4 numbers of the American Bee Journal to do it in, while we have material for 40. The only thing we can do then is to give short glimpses, reserving the bulk of our experiences for a series of "Travel Notes," which will be published if we don't tire you too much. If you can be given one hundreth of the pleasure we have had, it will be satisfactory.

Last Sunday, Aug. 31, was the climax day of our trip. At the fine country home of Mr. Bertrand, on the north shore of Lake Leman, a dozen or more bee-keepers were invited to a tea in our honor. Not only were local distinguished visitors present, but Mr. Cowan, the learned editor of the British Bee Journal, and author of a number of bee-books, had seized this opportunity to visit his old-time friend. He had arrived from England that same morning; a very pleasant surprise to me. Mr. Cowan is a bacteriologist, a microscopist, a botanist, and a bee-keeper. He is a living, walking encyclopedia, as we found out, for he appeared to know the botanical name of every plant, every blossom in the park, and there are many.

I cannot give here a detail of the events of that pleasant day. We hope to have a photograph which was taken by one of the guests. We will then have a more detailed account of the doings and of the discussions on bees, which took place in the afternoon.

2658 Oryon — Chalet Bertrand-Olivier

Summer home of Mr. E. Bertrand, where the editor and his wife were entertained

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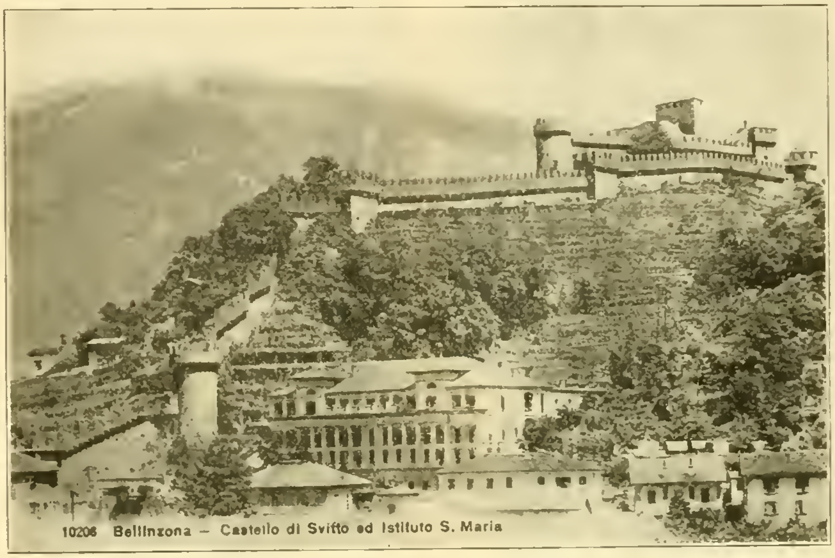
Everything has an end. The end came. On Tuesday we left that hospitable home with much regret. Mr. Bertrand is of nearly the same age as our own Dr. Miller. His hair is white, but his heart is young. He is 81 years young. I think he looks younger than he did in 1900, when I saw him before.

ITALIAN SWITZERLAND.

For a whole month we traveled in Switzerland leisurely, happily, going from the apiaries and the bee-keepers' homes to the snow peaks, or to the quiet lakes. On that day, Sept 2, we made a quick trip through French, German and Italian Switzerland; from the southwest corner to the extreme southeast, passing through Lucerne, for we preferred the Gothard trip to the Simplon. Of the trip by rail, we will speak later. It will take a special letter to tell of the kaleidoscopic changes of such a journey. We must be brief, for we want to speak of Bellinzona and of the bees of Italian Switzerland.



BELLINZONA, IN ITALIAN SWITZERLAND.

On Wednesday morning we awakened in a hotel of that pretty ancient city. Mr. Biaggi's brother, a very well educated Swiss Italian gentleman called upon us at 9 o'clock, to escort us to his brother's apiary in Pedevilla, a mile off, at the foot of the mountain.

We were there in 20 minutes, and found the apiary among the trellises of a vineyard. The grapes here are arranged in trellises high enough for a man to walk under, and it is very interesting to see the grapes hanging over one's head. But it is not convenient for horse and plow cultivation. Nearly everything is done by hand. At the apiary my first question was, "Are your bees cross?" I had passed a fruit vendor's stall in Bellinzona a few minutes before, and had noticed the bees swarming over damaged grapes; a clear evidence of honey dearth, and an inkling to their possible misbehavior. But the bees were not cross.

Among the German-Swiss bee-keepers I had used no veil, but kept one in my pocket. In this instance I did the same, and inspected some 30 colonies, finding them very regular, and good-looking leather-colored Italians, just what I was looking for. I pointed to a hive and expressed a desire to open it. My host brought out his smoker, a European Bingham. These two words must suffice to describe a most clumsy imitation of the best smoker in existence. Why the average European manufacturer cannot imitate the Bingham smoker in its good points is beyond my comprehension. The spring is hard, the bellows slanting to excess, the air connection is poor, and the hole in the nozzle so small that it allows but a very small stream of smoke.

Mr. Biaggi is one of the kind of bee-keepers whom the bees do not sting, or at least do not vanquish. He opened the hive and we had found the queen, a fine young one, when a careless motion caused us to crush some bees. Then the Italian bees showed us what they could do to defend their home against careless intruders. I retreated under a grapevine and hurriedly put on my veil. But my host stood his ground, barefaced, and finally brought the bees to time so that I could continue the investigation and open another hive.

Mr. Biaggi rears some queens by our methods, taking the queen-cells from strong colonies under the swarming impulse. But most of the queens he sells are simply taken from box-hive colonies or straw skeps. He holds that the Italian bees are immune to foul brood, and that it is owing to their rusticity. He compares the bees to human beings, and says that the peasants of the mountains are more rugged and healthier than the pampered gentlemen of the higher civilization. We had quite a little discussion over the matter, for I held for artificial selection as a chance for further improvement. He held that the Italian bees of those mountainous regions, where the snow is neighbor to the vine-clad hills and to the olive growing plains, are thereby more rugged and stronger than anywhere else. Let the reader decide. One thing is sure, Biaggi's bees can take care of themselves. Their behavior on the combs is exactly what we are used to, in the pure bees, quick and steady, and they adhere to them magnificently.

When we took our leave we were presented with a magnificent portrait of Dzierzon, bearing his own autograph; a picture about 18x24. If I can bring it home safely, I propose to have it framed for my study.

CROSSING TO ITALY.

That afternoon we traveled the whole length of Lake Maggiore, on a steamboat with English, American, French, Italian, and even Australian tourists. Shall I speak of its beauty? Must I mention the Borromean Islands, the Isola Bella? Those are said to be the most beautiful islands on earth. But we had only a glimpse of them. How can a tourist visit much country and get more than a glimpse of each thing of beauty?

At 6 p.m. we gradually left the mountains for the plains of Lombardy. At 8 p.m., after a rush among fields, manufacturing towns, etc., we found ourselves in the immense railroad station of Milan. This city of 690,000 people is one of the white, clean cities of the world. As we entered the "bus" of the Hotel Moderne, an old gentleman jumped up from his seat on the inside and exclaimed, "Mr. Dadant, you are punctual!" It was Count Visconti, the president of the National Italian Association, who had kindly volunteered to meet us. But we did not expect him, and it was quite a surprise.

With true Italian impetuosity, he said to us: "Tomorrow you are to be not only our guests but our slaves. We are going to look after you, and you must do what we say......except Madam, however (bowing to my wife), who may command us in whatever she wishes. The next day Madam is invited to breakfast with my daughter, and (smiling) she may bring her husband with her if she desires."

So here we are. Count Visconti Di Saliceto and Dr. Triaca, the president and vice-president of the Italian association, are to act as our cicerones, and those only who are acquainted with Italian hospitality can appreciate our good luck. That is why I got up this morning at 5 o'clock to tell you about what is in store for us.

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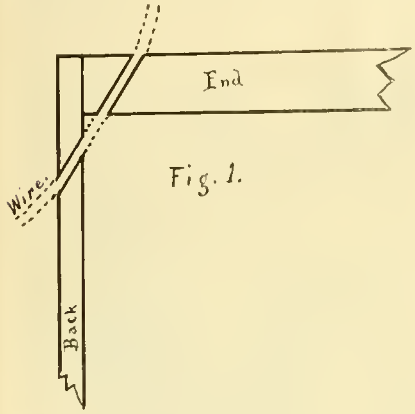
The Decoy Hive

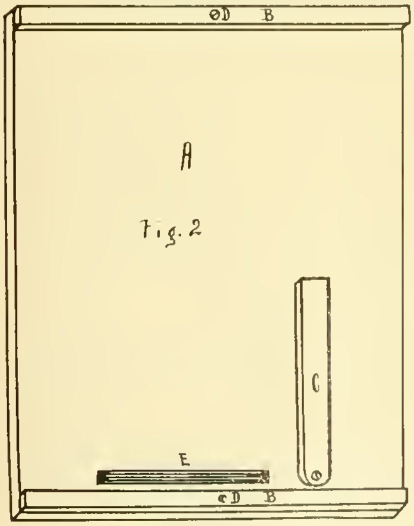
BY DR. A. F. BONNEY.

AT the suggestion of a hive manufacturer, I offer a description of the decoy hive I have used for several years with great success, making them from boxes acquired from the local stores. Old-time bee-keepers may skip all this, for I am writing for the beginner, who is often puzzled to get bees, and knows nothing about a decoy hive. Being isolated from the bee-keeping world, I never read or heard of such a thing, and had to invent it myself. I have written articles about it for the agricultural press, and have received many letters of inquiry. I think there are many who would like to know all about it.

The decoy hive was a thing of development with me. At first I used merely a box with a hole near the bottom for the entrance, and a wire loop by which to hang it up. As time passed I improved it by doing away with the cross-sticks our grandfathers at one time used, because I look at my decoy hives almost daily during the swarming season, and after that is past I put into the boxes spoiled sections, those with more or less wax in them, or frames filled with comb, for which I have provided, by putting 4 cleats on the inside of the ends to take 3 frames.



MANNER OF FASTENING THE END AND BACK TOGETHER.

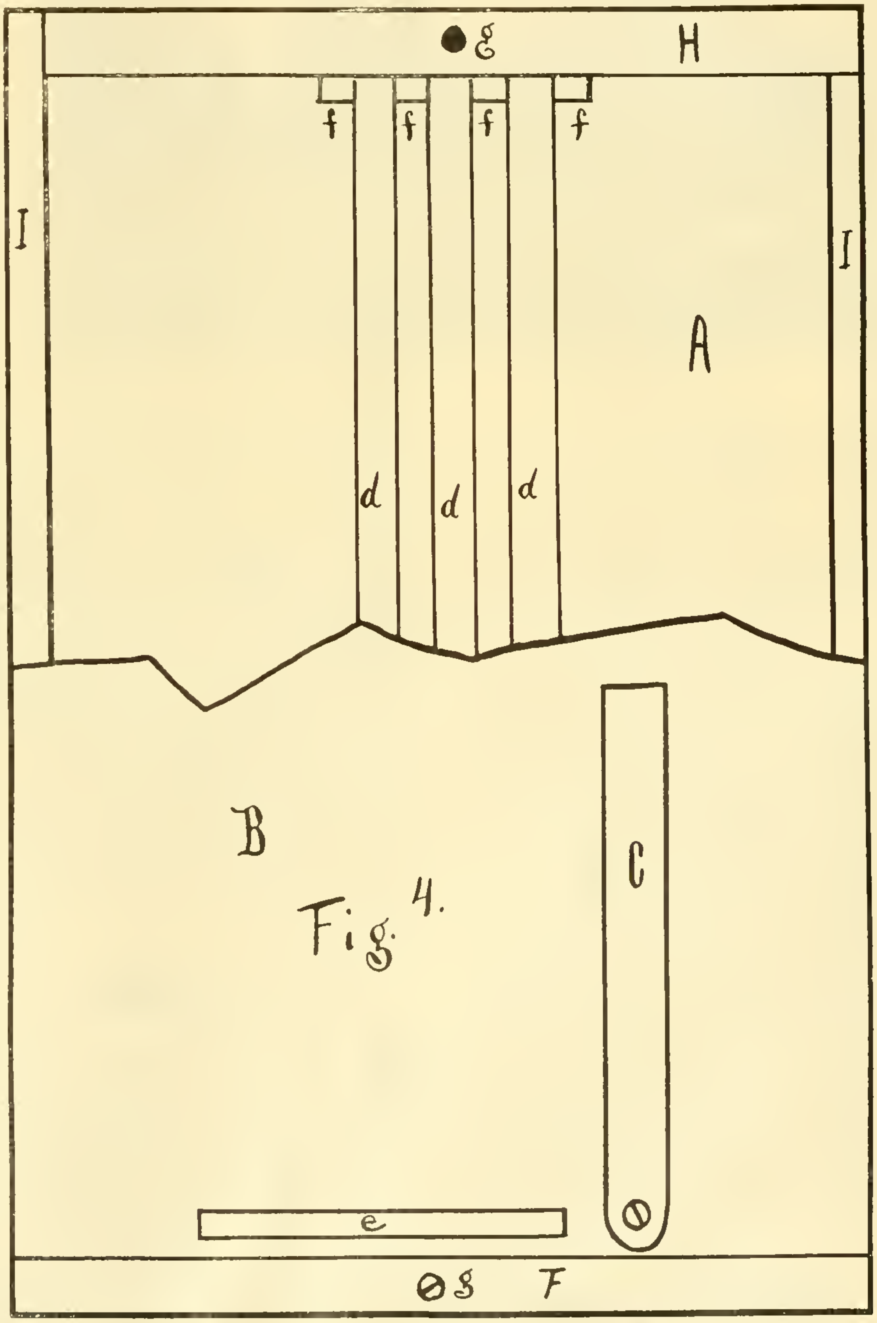


FRONT OF HIVE SHOWING THE ENTRANCE. A, cover; B B, cleats; C, door; E, entrance; D, screw holes.

The decoy hives I now use are made as follows: From any kind of lumber, that being from store boxes is good enough, I make a box a little longer and deeper than the frames I want to use in them, and in each end, on the inside, nail 4 cleats to hold 3 frames The box can be of any width, but 10 inches is wide enough. In one end, on back or side, I bore a hole through side and end. This is about ⅛ of an inch in diameter, and is bored thus: A wire is then passed through the hole and made into a loop. I do not make this box very tight, as the bees will want ventilation.

Next I cleat the cover together with a strip on each end, on the outside Each cleat is an inch wide and ⅜ of an inch thick. In the middle of each cleat I bore a hole to engage with the center of the end pieces, then close to the bottom cleat cut a hole ⅜ of an inch wide and 6 inches long for an entrance. If there are cracks enough in the box to ventilate it well, all right, otherwise I put a couple of ⅛-inch strips on the edge of the end boards, which, by holding up the cover, will make a crack on each edge.

Finally I cut a strip of board 8 inches long and one inch wide, drive a couple small nails in the edge close to one end to keep it from splitting, then bore a hole between them on the flat side to



SECTIONAL VIEW OF DECOY HIVE.
A, hive. A, cover cut to show cleats f's and frames d's; H, end; II, sides; C, door; F, end cleat; gg, screw holes

take a screw. Lay this strip over the entrance, first rounding the end, and put a screw in. This makes a door which can be raised out of the way, and it rests on the bottom cleat when closed, as the beginner will want it when it is to be taken down.

I paint my boxes with white lead, then with a small brush and black paint number the covers and boxes so that I can assemble them quickly after a busy season, for they get scant attention when empty if I do not want to put them up again at once. Of course, they can all be made to one measure, and thus be interchangeable, but to make them strictly so requires too much time and care.

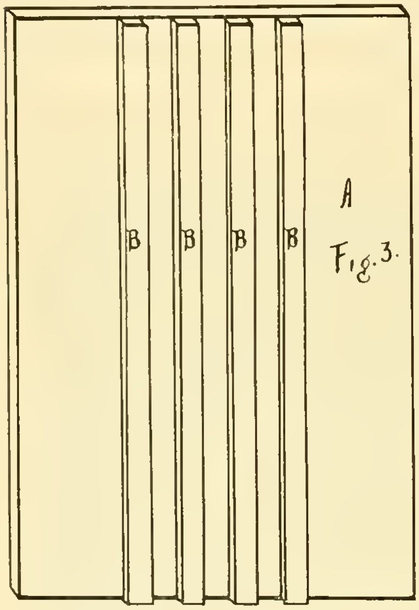


Fig. 3.

Interior View of End of Decoy Hive. A. end; B B, cleats.

One may judge of the value of these decoy hives when I state that in one season I captured 35 colonies in 20 boxes, and even this season I got 24, small swarms, in 50. The best marked of these I used to make new colonies; the others to strengthen weak ones, thus gaining 20 strong colonies at a cost of about a dollar for having the hives hauled to the grove.

These decoy hives are nice to help to take bees out of house walls by aid of a Porter bee-escape, as a small colony with a queen can be put in handy close to the entrance. I got a couple of nice colonies this season in this way. Also if one lacks hives the bees can be left in the boxes, the 3 frames put in, to be removed to a hive later on, or the bees united with another swarm.

It does not seem to make a hit of difference where the decoy hives are hung, only so they are well shaded. I have had the bees go into one that had fallen to the ground. A swarm took possession of a bee-keg well under a building; and 8 or 10 feet from the ground seems to be as well as 40, and it is a great deal easier to put them up.

The beginner should remember that the queen he gets with a swarm is apt to be old, and he should rear a new one as soon as possible, for fear the one he gets will not live over winter, which, while having no particular connection with the decoy hive, is worth knowing.

Figure 4 is a comprehensive sectional view of the decoy hive.

Buck Grove, Iowa.

Paraffine for the Inside of Hive-Bodies

BY B. KEEP.

ALMOST every issue of the bee-publications contain inquiries about disinfecting hives after foul brood. The usual advice is to disinfect, and usually fire is suggested as being the most effectual.

I am an enthusiastic advocate of a hot paraffine coating for the inside of the hive-body—originally to prevent absorption of dampness. Such an application acts in two ways as a disinfector; first, by reason of the heat, and second, by sealing up all germs beyond any probable resurrection. The application can be made to the hive-body whether old or new, but far preferably to the new, clean wood, when the paraffine will sink into the wood, closing all pores against germs and moisture. I have found the benefits of hot paraffine-coated brood-chambers to be so marked that I would not now think of wintering in uncoated hive-bodies, whether single or double.

At the annual meeting of the New Jersey State Bee-Keepers' Association at New Brunswick last December, Dr. Phillips being present, was asked "whether a hot application of paraffine on the inner surfaces of the hive-body would be an effectual disinfectant after foul brood?" Dr. Phillips gave it as his opinion that it would.

The hive-body, when so prepared, can be sterilized at any time by simply "ironing" with a hot flat iron. It would seem that this would be as quick, as easy, and certainly much safer than any use of fire, while property value would not suffer in the least.

As hinted at above, there is another benefit secured by the paraffine coating —the water proofing of the hive-walls— "the proof of the pudding is in the eating."

Lyndhurst, N. J.

Wisconsin Experiences

BY HARRY LATHROP.

WE have had three good crops of white honey in our section in succession, and but for the severe losses of winter before last, some great crops would have been produced. There is only one thing the matter with southwest Wisconsin as a honey-producing country, and that is the lack of bees and bee-keepers. We have only a few who devote much time to the work, and some of the real specialists have been severely handicapped. I never felt so bad for any one as I did for Sister Candler, of Cassville, when she wrote me over a year ago that her mother was sick, the work in her large apiaries behind, and no help. I would have gone over to her assistance myself if I had not been up to my neck in work. The great prosperity of other branches of farming makes it hard to get help for apiary work. Farmers pay good wages for help and then are short.

The present honey season bade fair to be the greatest in history, as both white clover and basswood promised a maximum yield. White clover yielded nobly, though cut short by extreme tion goes, the basswood made no showing. The hot weather seem to ripened hot weather, but as far as my observa- it up in a very few days. The quality of our honey, both as to color and body, is the very best. Although a large crop has been produced, I would advise holding the price up to what it was last year. My retail price for the 10-pound pail of white honey is $1.25, and my sales are mostly made by mail. In the 60-pound cans I sell at 10 cents, can included. At these prices a bee-keeper can live, and the people, including the working man and his family, can have honey to eat.

F. B. Cavanagh, of Indiana, for whom I have the greatest respect and admiration as a bee-keeper and man, says we don't get more for our honey because we don't ask more. He argues that 25 cents per pound for extracted honey, to the consumer, is a fair price. I will not take the time to argue the matter, but I venture to say that if Mr. Cavanagh was a working man with a family he could not place honey on his table as an article of food at that price—it simply can't be done. I had hoped to see honey become a staple, but it cannot if it costs the consumer more than about twice as much per pound as the cost of pure sugar syrups.

In talking with old bee-keepers who never read bee-journals or write anything for publication, one sometimes gets hold of a new idea. Here are two that I got from an old gentleman living at Elkhorn, Wis.: He says that a mixture of sulphur and table salt, a tablespoonful, placed in the entrance of each hive in cellar wintering will prevent dysentery. I shall try it at the first opportunity. He also told me of a new way of *lining bees*.

He takes a Mason jar, quart or half gallon, drills a couple of air holes in the bottom, using an old file for a drill, and holding the jar under water while working to prevent breaking. He then puts some thin honey on a sponge in the cap of the jar, and proceeds to find a bee on the range. He gets the bee into the jar and allows it to work on the honey, holding the jar bottom up. The holes in the bottom furnish air, and are necessary. As soon as the bee fills itself, it buzzes around in the

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jar for a time and then settles on the side next to its home. Carry it on this line and try again. It will always settle on the side nearest the hive. In this way he says he has lined many trees with only a single bee in captivity. It was an entirely new idea, and if I ever get old so as to have enough leisure time to hunt bee-trees I will try it.

Bridgeport, Wis.

Bee-Keepers I Have Known—S. W. Snyder

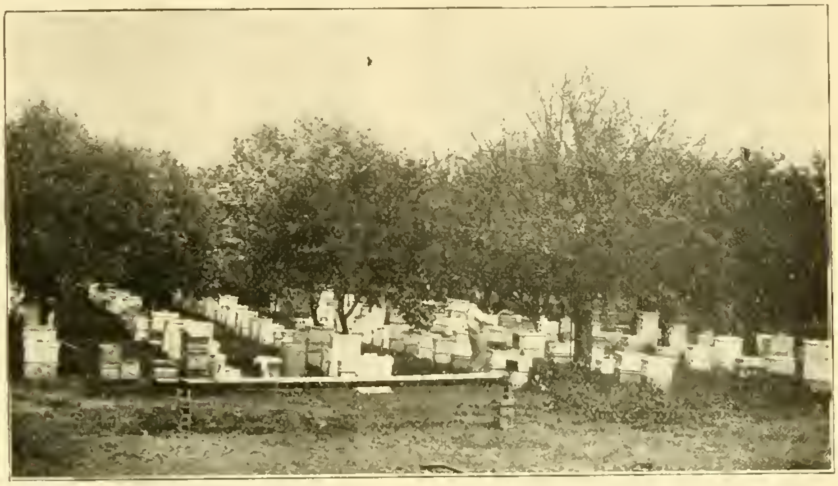
BY FRANK C. PELLETT.

LEAP YEAR ladies have overlooked a promising prospect in Simon Snyder, of Center Point, Iowa, secretary of the Iowa State Bee-Keepers' Association, and senior member of the firm of Snyder Bros. Mr. Snyder is a man of affairs, and interested in nearly every important enterprise of his home community. He is president of the local bank and telephone company, and has been compelled to decline similar positions of trust in other local enterprises.

S. W. SNYDER, SECRETARY OF THE IOWA BEE-KEEPERS' ASSOCIATION.

The firm of Snyder Bros. is engaged in general farming and fruit growing on rather an extensive scale, and a number of men are employed the year around. The Snyders are prominent in Iowa horticultural circles, and the home farm is a most interesting place to one interested in horticultural subjects. In the trial orchard is to be found nearly every important variety of fruit suited to Iowa conditions. Of plums alone nearly 400 varieties are represented, besides apples, peaches, pears, grapes, berries, etc. Several fruits, grapes and berries especially, are grown on a commercial scale, and during the fruiting season quantities of fine quality fruit are shipped to various markets.

The nursery is under the direct supervision of the younger brother, Davis Snyder, though the subject of our sketch occupies a good deal of time there, also. While Simon has a general supervision of the whole business of the firm, the apiary receives his personal attention; and although he did not tell me so, I have a secret notion that the bees helped to put some of the other branches of the business on their feet in the days before success was assured.



SNYDER BROTHERS APIARY AT CENTER POINT, IOWA.

When Simon was a boy his father kept a few colonies of bees in box-hives on the old-time let-alone plan. On one occasion the senior Snyder was severely punished by the bees when he failed to take proper precautions against their stings, and he declared that he would have nothing further to do with them. He accordingly gave them to the boy Simon, who has been a bee-keeper since that day.

The Snyder apiary consists of more than 200 colonies in one yard, which is an unusually large number for one location under Iowa conditions, but the press of other work and the difficulty of securing satisfactory help prevents the operation of extensive out-apiaries. The locality is good, and the firm is considering the establishment of a system of out-apiaries if satisfactory men can be secured to take charge of the work.

As secretary of the Iowa State Bee-Keepers' Association, Mr. Snyder has done effective work. At the convention in Des Moines a plan of work to be attempted by the society was outlined, and remarkable results have already been secured.

It is only on the theory that he has been too busy that I can account for the fact that Simon is a bachelor.

Atlantic, Iowa.

Grading Extracted Honey

BY MAJOR SHALLARD.

ON page 154, May number, rules are given for grading comb honey, but I never see any for extracted, and as practically all the honey produced in Australia is of the latter variety, the former rules are not of much use to the apiarists here. I want to get a well thought-out set of points for judging or grading extracted honey. I am not making any suggestions on the matter myself, as I want, if practicable, to get the views of the most experienced-honey producers available.

The daily papers here, in the interests of the agents, quote honey from the various districts. They quote from 4 cents for one district's honey up to 8 cents for another in spite of the fact that some honey which comes from the former is quite equal to any from the latter, and some from the latter is quite as inferior as any from the former. By this means some of the agents are enabled to make returns at market-quoted rates to the producers from the cheaper district, while at the same time they sell the best honey from that district at the higher price quoted for the dearer district. In other words, they "take the producer down."

To prevent this state of things, I want to get suggestions for a set of grading rules which will be accepted by a conference of delegates from all the bee-societies in New South Wales.

I have tried on several occasions to get the papers to quote honey on its merits, no matter where it came from, but have had no luck. The trouble is that these agents are advertisers, and the honey-producers are not. My idea is to get enough producers to care enough to agitate on the matter, and keep on agitating.

Glenbrook, Australia.

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Why Do Drones Go With a Swarm?

BY EDWARD F. BIGELOW.

FROM time immemorial it has been the common saying with bee-keepers and with apiarian books, that the old queen leads the swarm and leaves in the hive several unhatched queens that will in the future emerge and provide for the continuance of the colony.

That Nature should do this has always seemed strange to me. That one queen should lead the body in flight and several queens remain to provide for the continued existence of the colony has suggested questions. It seems remarkable that Nature should send out say 80,000 bees, and suspend the life of all upon the life of one. If a kingbird flies into that swarm when in mid-air and swallows the queen, the bird has unquestionably destroyed the entire colony, if there is only the one queen. But it has been maintained that Nature leaves several unhatched queens within the hive to provide for similar dangers, in which case if one or more are killed several are still left. It seems strange that several queens should be provided where there is the least danger, and only one lead the flight for many miles where there are many dangers. In my own mind I have questioned many times whether it is true that Nature entrusts the continuance of the flying swarm entirely to the life of one bee.

I have from time to time heard it rumored, and even discussed by professional bee-keepers, that when the weather is unfavorable the old queen is delayed in her flight with her following until several of the virgin queens within the hive had hatched out; and that sometimes these queens hatched during the delay, accompanying the flying colony. But the question that puzzles me is, why do these virgin queens go, and especially why does the mated old queen take with her not only some workers, but a large number of drones? If there are no virgin queens in the swarm, then Nature is doing a superfluous thing, when she sends on a swarming flight these heavy, clumsy, slow flying drones.

It has long been my hypothesis that these drones have a purpose at such times, and that when more than one queen is found in the flying or clustering swarm, there is a purpose of extra drones in view of the exigencies and dangers of the flight. If the old mated queen is killed then there is the safeguard that one of these "extra" virgin queens will mate and take up duties of increase. If this hypothesis is not tenable, then will some one explain why the drones go with the mated queens? Back in the hive from which they came they had a possible use for several of the warmer months, but Nature kills them off when they become useless. Does it seem reasonable that a flying swarm with very limited supplies of food would take along the drones if there is no possibility of their use?

If the duties of increase fall upon a virgin queen, then the drones have a decided use. Does Nature provide against accidents to the old queen? There are some things that set me to thinking along that line, although I do not yet wish to announce positive conclusions. I may be mistaken, but the circumstantial evidences are worth considering.

With that hypothesis in mind I have made some careful studies, and thus far I have found that almost invariably there are several queens in the swarming cluster, and a large number of drones. It is the presence of these drones, more than anything else, that makes me think that it is not mere chance that sends out the slowly hatching virgin queens. I recognize the fact that I am here on dangerous ground, and may bring down on my pate antagonistic verbal blows from veteran and well-informed bee-keepers, when I venture to propound the theory that Nature, at swarming time, provides several queens for the flying bees as well as for the colony left at home. It is my opinion that there is no war between the queens of a colony so long as the colony is in flight or in a clustering condition, but when the bees have settled upon a home, then comes the war of the queens, and only one survives. If by chance it should be the old queen that is superseded or killed by one of the virgin queens, then the drones are present and ready to cope with the emergency.

Practically the same thing takes place in the colony left behind. Several queens are hatched, and plenty of drones are present for mating. I am

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aware that it may be considered almost sacrilegious to make the statement that several queens lead in this swarming flight; yet we frequently hear of two colonies going together, and they, I believe, are nothing more than two sections of one swarm, lead by two queens. Sometimes there are more than two clusters. In a recent cluster that alighted on a small willow tree, there were at least four clusters, and within each one of these little bunches was a queen with a large number of drones.

Here, I believe, is a field for interesting and instructive investigation. The trouble is that few bee-keepers have taken the pains to examine the whole of a swarming cluster. The best method to do this is to take the cluster, lay it carefully on a white sheet on a box or a table, so that the bees may spread out as one might spread out peas or beans to sort them over. Have plenty of nursery cages, so that when queens are found they may be placed in captivity. In a recent colony from which I obtained three queens, I found, upon hanging the three together, that the bees cared for only one, and let two of them die of neglect. They, several times, tried to swarm, but soon returned to their captive queen.

I am carefully investigating further, and am not yet prepared to propound the definite theory that Nature provides a number of queens and guards against the dangers of the flight; but I am more and more inclined to think that in many cases this is so. In fact, I wonder if any of our veteran bee-keepers have positive proof that in *any* swarming cluster there is only one queen? We all know how difficult it is to find the queen in a 10-frame hive. Much more difficult is it in a large cluster of bees. Even if I were to look for an hour in such a cluster carefully spread out, I should not be prepared to state that there is more than one queen. Finding only one does not prove that there are no more; but finding several does indicate very strongly that Nature is sending more than one with the swarm.

I shall not be convinced if you tell me that you have only one queen in your swarm. Before I can be convinced that only one queen goes out, I want an answer to this question: Did you make prolonged careful investigation of all the bees within your swarm? I am also ready to demand that the entire swarm shall be sifted through a queen bee-excluder before I can be convinced that there is not more than one queen in every cluster.

Unquestionably there were a large number of drones in every swarming cluster that I have seen. But will you, old-time bee-keeper, or even young apiarist, who keeps his eyes open and thinks about things, tell me why those drones go out with the cluster if only the old mated queen leads the colony? Here is a field fertile for research, one in which I am working with diligence and enthusiasm, and a mind open to more truth either from direct observation or from the experience of fellow bee-keepers.

Sound Beach, Conn.

Experiences of a Beginner

BY W. O. ROUDABUSH.

ONE hot summer day about 32 years ago, when a bare-footed lad of 12, I strolled away towards a creek that came dashing down its stony course from the foothills of the old Blue Ridge mountains, in Greene Co., Va., in search of a pool deep enough to take a bath.

After a refreshing bath in the clear mountain stream, I started on my return home. I was walking up the banks of the stream through a cornfield, where there was an old darkey plowing corn with a mule, and was somewhat surprised to hear the old man shout, "W-h-o-a! Say, dar boy, don't you go up dat way. Dars bees up dar on dat maple bush, an dey sting you to def."

After some hard begging, I got the old fellow to come close enough, say 50 yards, to show me just where they were. And after more persuasion I finally got the old *barlow* knife to cut the limb; but he still insisted that I was "guine be stung to def, an Mis Mit an Mass Jake (my mother and father) guine blame me wif it." I explained to Uncle the bees would not sting me, and promised to put off operation until he could get the mule to the other end of the field.

He shambled off down the corn row, and I went after the bees.

His old knife was so dull it was a slow process, but I finally secured my bees and started my one-mile tramp home. I was tempted to believe the negro knew more about bees than I. Several times when I would stumble, handfuls of bees would drop off the cluster and prefer crawling up unde my pants than settling on the cluster again. I finally succeeded in getting them home, and hived them in an old box-hive (bee-gum), and my bee-keeping experience had begun.

It ended the next day about 9 o'clock with that particular swarm—they came out and put off for the woods. I was so full of enthusiasm and disappointment that my aunt gave me $6.00 to go to a man, who kept a good many bees in the old-time Simplicity hives, and buy a fine prime swarm. After getting these home, I wrote to a friend of mine, mentioning my bees, when he sent me a bee-book and several copies of the American Bee Journal, edited then by Thomas G. Newman.

Late as it was, I ordered and safely introduced an Italian queen; and I believe now it was the first Italian queen that came into that county. When her bees began to hatch, people came for miles to see the bee I paid $2.00 for. From some I got words of praise and encouragement; from others the opposite. A few told me I was crazy. Why is it in this world of ours that there are some people who delight in throwing, seemingly, insurmountable obstacles in the way of some boy or girl who has it in his or her heart to accomplish something along some particular line? But all the warnings and advice of the "Smart Alecs" only fanned the spark of enthusiasm into a flame, and each year has added more fuel until now the disease has assumed a chronic form, and I think it is incurable.

I have never been an extensive bee-keeper. I never had as many as 100 colonies at one time. I have always produced comb honey, that sold on the market for 2 to 8 cents more than other honey. I have always been successful in wintering my bees, and my crop of honey is usually larger per colony than the average for this locality.

Hagerstown, Md.

DR. MILLER'S ANSWERS

Send Questions either to the office of the American Bee Journal or direct to
DR. C. C. MILLER, MARENGO, ILL.
He does NOT answer bee-keeping questions by mail.

Bees Not Working in Supers

I have 5 colonies of bees and they are doing well as far as I can see, but they are not at work in the supers. What is the cause? and what is the remedy, if any? ILLINOIS.

ANSWER.—There may be several reasons why bees do not work in supers. There may not be a sufficient flow to supply more than their daily needs. The colony may not be strong enough, and you must wait until it builds up stronger. The brood-chamber may not yet be filled, and the first care of the bees is to fill all vacant room below before storing in the super. Sometimes, however, the bees are slow about making a start in supers when they seem strong enough, with a good flow, and the brood-chamber filled In that case you must put a bait in the super to bait the bees into it Just how you will do that depends upon the character of your supers. If extracting-supers, then you can likely put into the super a frame of brood for a few days, or until the bees begin work in the adjoining frames. If you have sections in supers, then put in the center of the super a section that is partly built out, either empty or containing some honey. If you can do no better, you can cut out of one

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of the brood-combs a piece of brood or honey and put it in a central section. If that will not start them to work, you may know that they are not strong enough to store in super, or that there is not enough for them to store.

Moving Bees Back Home for Winter

We have had a very dry summer here 150 miles south of Chicago since May 1. The clover pasturage burnt out long before the bees got any surplus from it, and only this week have we had any rain to bring things out. About June 1, I looked around and found that the prospects were very good about 60 miles north of me. Consequently, I moved almost all of my bees (65 colonies) to this location, and got tangled up with the best clover flow I ever saw. Except for the last two or three weeks there has been plenty of rain. Since there has been no rain here up to now, do you think the prospects justify me in shipping those bees back home this fall?

As I understand it, clover has to have one year to grow before it can be counted on for a satisfactory yield. It is surely killed out now, and what we have must come up from the seed this fall. However, after the exceedingly dry year of 1911, I had a good season in 1912, although the flow was unusually late in starting. I think the bees are now situated among honest people, and I don't believe they would be molested during the winter. What would you advise?

ILLINOIS.

ANSWER.—If I understand correctly, the real question for decision is whether you can count on clover next year in your southern location, or whether your northern location will be, as it was this year, greatly superior. Of course in the latter case it will be advisable to leave the bees where they are. I am sorry to say I don't know enough to answer. I know it is said that clover must be a year old or older before it yields nectar; but I don't put entire faith in that view. It would not surprise me if you should find, upon close investigation, that the plants from which your bees have gathered such a big yield of nectar were less than a year old. I doubt if you can tell a year ahead whether your northern or southern location will be the better. It is likely that you cannot tell until next spring whether clover is more abundant north or south, and even then it is quite possible that more nectar will be produced in the place where clover is less abundant. So you see it is a mere matter of guessing, and I can't guess any better than you can. Sorry.

Taking Off Honey

1. When is the best time to take honey from the bees, at noon, in the morning, or in the evening?

2. How can I kill bees and save the honey? I have 2 little swarms that are not worth keeping.

3. How can I get the bees separated from the honey after it is taken off? IOWA.

ANSWERS.—1. That depends somewhat on circumstances. Generally bee-keepers take comb honey from time to time as fast as each super is finished and sealed, or nearly so. In that case most of it is taken during the season that bees are busy at work, and it is better to operate while most of the gatherers are abroad in the field, and not so early in the morning or late in the evening. If, however, bee-escapes are used, they are put on toward the after part of the day and the honey taken before the middle of the next day.

Much the same thing may be said about taking extracted honey, although some of our best practitioners do not take their extracted until the close of the season for each kind of honey. Of course, it is also true that the last of the comb honey is taken at the close of the flow. At such times there may be some gain by getting at work pretty early in the day, before robbers are much on the wing.

But after all this is said, it should be added that those who are in the business extensively do not pay much attention to the time of day, but work away any time of day, or the whole day, just as suits their convenience.

2. The usual way to kill bees is with the fumes of burning sulphur. But if each of those colonies is too small to be worth saving, you may be able to make one fair colony out of the two. Or, you could add each one to some colony that would be the better to be a little stronger. Nowadays it is not usually considered good practice to kill bees.

3. There are various ways of getting bees out of surplus honey. Some use the Porter bee-escape. Some drive part of the bees out with smoke, then pile up the supers on the ground and set a Miller escape on top of each pile. Some simply brush them off the extracting combs. For a small quantity you can put the honey in a large box, put a sheet over it, and turn the sheet over from time to time as the bees collect on it

Eggs that Will Not Hatch

About a month ago I sent for a queen-bee. She came apparently in first class condition. I introduced her to the bees right away, liberating her from the cage in about 40 hours. She seems to be in normal condition. She lays eggs all right, but they will not hatch. This is the first case of this kind I ever saw. There is lots of honey in the hive, and quite a number of bees, but they are getting fewer all the time. I want to save my bees if possible.

ILLINOIS.

ANSWER.—Sometimes a queen lays eggs but the bees do not hatch them. Close observation will likely show that at the close of the laying season, eggs may be found in the hive at least a few days after any very young brood is present. That shows that the queen lays, but the workers pay no heed to the eggs. But in the season when other colonies are rearing brood right along, and honey coming in freely, if eggs do not hatch out, the trouble is with the queen, and the only thing is to kill her. Such cases are exceedingly rare, but they do sometimes occur. I have had one case of the kind, and I think only one.

Shipping Bees and Inspection

Do I have to have my bees inspected before I can ship them? They are free from foul brood? OHIO.

ANSWER.—I don't think there is any requirement to have them inspected unless you ship them out of the State. In that case it depends upon the law of the State into which you ship. Some States require inspection, and others do not. Whether they have foul brood or not has nothing to do with the case; if the law requires inspection, all bees shipped into the State must be inspected

Queenlessness—"Prowling Stock"

1. I have a colony of black queenless bees. I bought 2 colonies this summer, and these black bees had foul brood. I took away all their combs and put them in a new hive, but they never built any combs at all, although I found a colony by the roadside and united the two. I took two frames of brood from the other colony that I bought and put into this hive, but they have not built any queen-cells.

2. Sometimes when I take off the lid there is a worm crawling on the underside of the lid about an inch long and one-fourth inch thick, gray color. Can that be some of the larvæ that got out of some cell, or is it some other prowling stock?

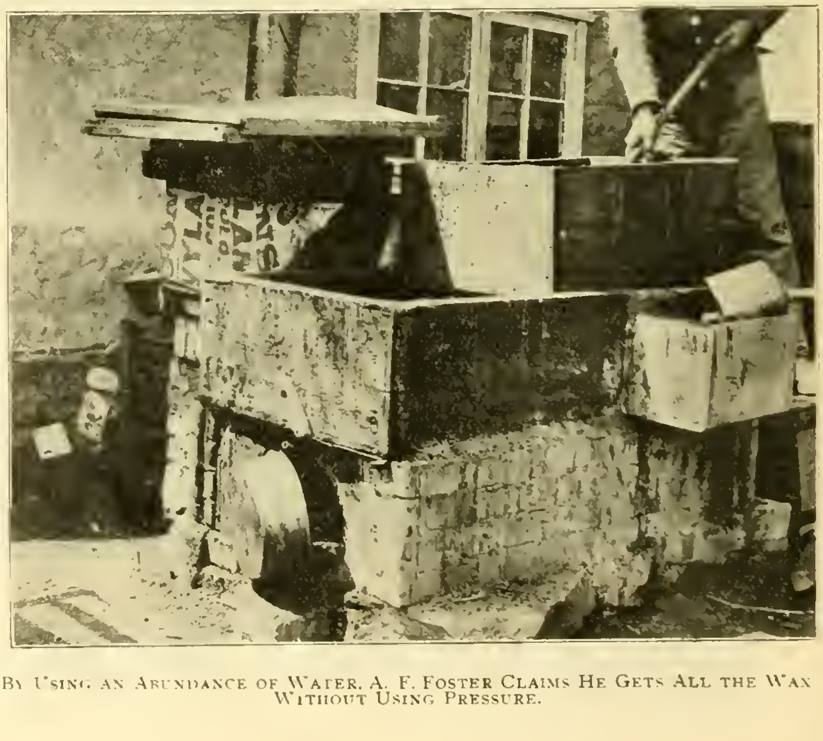
3. There are quite a lot of small ants running in and out of the hive. Will they do any damage to the bees?

4. The upper half of the two frames I put into this hive have sealed cells. Do they contain honey or brood? They have a light color. The caps are protruding a little.

NEBRASKA.

ANSWERS.—1. It is doubtful that those bees are of value enough to fool with, seeing they are mostly old, and it so late in the season. They might be united with some other weak colony were it not that they might carry the disease with them.

2. That worm is not an escaped larva from one of the cells of brood, but "prowling stock" of another sort. It is the larva of



BY USING AN ABUNDANCE OF WATER, A. F. FOSTER CLAIMS HE GETS ALL THE WAX WITHOUT USING PRESSURE.

the wax-worm, which destroys combs when they are not properly protected by the bees. These prowlers are not worth minding in strong colonies, or those of good Italian stock, but when a queenless colony is on hand, especially a weak black one, these moth larvæ are on hand to finish up, like a lot of crows about a carrion.

3. The ants probably do no great harm except to annoy the bees.

4. I don't know from your description. Being at the top of the frame, one would expect the cells to be filled with honey, only the sealing of honey should be flat. But it would be easy for you to tell what was in a cell by digging into it.

Double-Wall Hives—Caging Queens

1. I am expecting to purchase about 10 or 11 colonies after Dec. 1, also other equipment, and would like your opinion as to the Protection hive, manufactured by the A. G. Woodman Co., of Grand Rapids, Mich.

2. Do you think that one inch of packing is enough, especially for this place? We are close to Rochester.

3. I hear about hives with 4 and 6 inches, in the Bee Journal, but do not see any of that kind advertised. Where may I purchase such hives? What dealers manufacture them?

4. What is the proper procedure necessary in the caging of a queen over another hive, as in the case of taking one out for 10 days or so, in the several different methods of management? What kind of cage is used, and how and what is the queen fed? Is the common Benton mailing cage all right when provided with good candy?

5. How long is it safe to keep the queen so caged?

6. Must she have attendants as in shipping?
NEW YORK.

ANSWERS.—1. I have no personal acquaintance with those particular hives, but most of the hives made are much like the common dovetailed hive, and so answer well.

2. It is generally considered that more than an inch of packing is desirable, most preferring at least 3 inches; but the protection is not strictly in proportion to the amount of packing. That is, 3 inches of packing do not give three times as much protection as one inch; possibly not more than 50 percent more protection. So a single inch might answer quite as well except in very exposed places.

3. Almost any dealer or manufacturer will furnish them on application.

4. Any cage that will go easily between the combs will answer, such as the Miller cage. The Benton cage is too bulky. Sometimes, however, instead of being put between the combs, the cage is merely thrust into the entrance of the hive. No need of any food in the cage; the bees will feed the queen.

5. It is generally neither necessary nor desirable to have her caged more than 10 days; but I have known a queen to be caged double that time without appearing to be much hurt by it.

6. No need of any attendants in the cage; they are likely to die in the cage and thus be a damage.

Diminishing the Entrance of Hives—Feeding in September

1. Will the bees winter in the open where the thermometer does not go below 50 degrees in California?

2. Should I diminish the entrance of the hive in winter?

3. My two colonies are strong with lots of brood, and appear to be working, as I notice them bringing in pollen, but they have no honey in their frames. There are lots of flowers in the neighborhood. Must I begin to feed them now (September)? I have no supers on the hives.
CALIFORNIA.

ANSWERS.—1. Yes, bees will winter out in a very much colder climate than that.

2. In your locality probably no contraction is needed.

3. Unless you expect a flow from some later pasturage, it will be well to begin feeding in September, giving them enough so that there will be no question about their having enough for winter.

Dead Queen Larvae—Moving Bees—Evaporators

1. This summer when I looked through the hives to cut out the queen-cells to prevent swarming, sometimes I found the larva in the queen-cell dead, and of a dark gray color. Besides this I could not find anything affected by foul brood in the least. I have never seen any foul brood, but I do not think that it is because it has not the same color as it is described in bee-books. Can you tell me what it is?

2. I would like to move my 13 colonies about 80 to 100 miles from here. I made arrangements to move them in the spring while they would be light and not so crowded, and so that there would still be snow up in the hills to take them on the sleigh where otherwise the road would be rough. The time to go over the snow would take about one day. If I would leave the entrance open, also the top, and shut it up with screen, put the hives on a spring wagon, and some straw under the hives, would this plan work all right?

3. I have noticed in a bee-book that in the East they take the honey off before it is sealed, and then let it run over the evaporator after extracting. Could you tell me where I could get an evaporator?
UTAH.

ANSWERS.—1. A dead larva sometimes is found in a queen-cell when there is no disease in the hive. It is possible that it may come from more than one cause, but perhaps in most cases it comes from being chilled. Queen-cells are quite commonly on the edges of combs, and so more exposed than other cells, and when a cool night comes the bees draw away from them, allowing them to be chilled.

1. Your plan ought to work all right. There remains the possibility of an unusually warm day occurring during the part of the journey when the bees were on the wagon, making the bees very uneasy. In that case you would quiet them by sprinkling water upon them.

3. I don't think any dealers or manufacturers keep anything of the kind for sale. At one time a good deal was said about them, but at present I think very few beekeepers in this country use evaporators.

Miscellaneous Questions

1. How do virgin queens look, and why are they not as good as others?

2. Why are my bees so ugly? I can go to my neighbor and be by his bees, and even put them in the hive bare-faced and not receive a sting, but when I go by my bees they always fly around me and sometimes sting.

3. What is best to feed bees when short of winter stores?

4. If I set up decoy hives will bees sometimes fly into them, and, if so, where is the best place to set them?
WISCONSIN.

ANSWERS.—1. A virgin queen looks very much like a laying queen, only her abdomen is smaller. Until she has mated with a drone she is of no value, for she will not lay, or if she does lay without mating, her eggs will produce only drones.

2. Bees are like folks; there is a great deal of difference in their dispositions; some are cross and some good-natured. Like enough you have happened on a cross strain, and should introduce a queen of better temper. Possibly the way the bees are treated may make a difference, since rough handling is inclined to make them cross. Then, again, bees that are where folks are passing by frequently are not likely to be as cross as those that are seldom approached.

3. Nothing is better than good honey, but if you haven't that, then feed syrup made of the best granulated sugar.

4. If stray swarms are plenty, you will be likely to get some in decoy hives. I doubt if it makes much difference where they are placed, only so the bees can easily get at them. I think it is customary to put them in the crotches of low-branching trees, such as apple trees; I don't know just why.

Division-Boards—Buying Queens

1. Of what use are division-boards, and how often should they be used?

2. When buying queens, would it be better to buy them close by?
ARKANSAS.

ANSWERS.—1. A division-board, properly so called, is a thin board more or less tight fitting, that divides a hive into two separate compartments, as when a hive is to be used for two or more nuclei, or when a colony is too small to occupy the whole of the hive. In this sense there are a very few division-boards, but when one is mentioned a *dummy* is really the thing that is meant. A dummy is loose fitting, not longer nor deeper than the frame of the hive. (It may be less than that.) Dummies are in use in my hives all the time, winter and summer. The frames do not entirely fill a hive, and the dummy fills up the vacant space at one side. It is much easier to get out the dummy than to get out the first frame where there is no dummy, and after the dummy is out it is easy to get

MR. LEWIS SCHWERTMAN, OF FREEPORT, ILL., AND A PART OF HIS APIARY.

out the frames. If less than the full number of frames is in the hive, one or more dummies are placed next to the exposed frame.

2. There would be no great difference except that with a shorter distance the queen would be a shorter time out of the hive.

The Dzierzon Theory

The following was copied from a daily paper. Is the doctrine true? I have never heard of it before.

"The strangest thing that Mr. Watts told the Review reporter was that the drones are produced from unfertilized eggs. One with experience with poultry would expect such eggs to fail to hatch. Scientists both by microscopical examination of the eggs found in drone combs and by studying the life history of the bees, have proven that the drone actually has only one parent, the queen mother, and every observing apiarist has seen convincing evidence of this fact."

ILLINOIS.

ANSWER.—Of all the bee journals of any language in the world, the one that I have valued most is the first volume of the American Bee Journal. That was published in 1861. Its chief value consists in the fact that it gives a full discussion of the Dzierzon theory, the kernel of which is that the queen is fertilized once for life, laying fertilized and unfertilized eggs, and that the unfertilized eggs produce only drones. In the half century since then there has been some attempt to controvert the Dzierzon theory, especially by Ferdinand Dickel, but intelligent bee-keepers quite generally accept it; so that the clipping is all right.

REPORTS AND EXPERIENCES

A Report from Nebraska

In February, 1912, I purchased 4 colonies of bees. They were in rather a weak condition, but during the summer they gave me 175 pounds of honey and 2 swarms. To these I added 3 more swarms, thus having 9 colonies the beginning of the present season. Up to July 25, I have taken off 445 pounds of what our merchant pronounces A No. 1 honey. Only one swarm has issued from the hives this season; but I secured another to the great relief of the telegraph operator at our station, as they had settled on the signal pole at the door of the depot, and a passing through train had angered them until they were vicious. The manipulator of the "ticker" was a prisoner until I had coaxed the bees into the hive. This gives me 11 colonies for the winter.

I have always been a lover of honey, but was never situated so I could care for bees. I had never seen a swarm hived, and did not know a worker, drone or queen, except that a few times in my life worker-bees had stung me; and a bee-sting on my person is a thing not to be forgotten, as the swelling and itching is something terrible to endure.

I have always been a reader and student of literature on bees, and much interested in them; hence, had some of the theory, and by the knowledge thus gained I was able to recognize each variety of the colony, and to hive unassisted the first swarm I ever saw clustered, and also captured the first queen I ever saw.

It seems strange to me that more people do not keep bees; for all the sweets to be found none can equal honey, both for flavor and healthfulness. Thousands of gallons of manufactured .syrups, made of various questionable materials, are consumed, and ofttimes to the detriment of those eating them; when the purest sweet gathered directly from Nature's own "factory" can be had for a little care and attention to the "busy bee."

I take no chances in getting stung, for I fortify myself with covering for my head. It is made by taking common window screening 10 inches wide and form it into a circle amply large to set out from face and neck; put a top to it made out of muslin, and a cape of the same; wearing under this a small cap to hold the top off my scalp. Then with a common pair of 10-cent cotton gloves that have been well oiled in linseed oil, to which have been added gaunlet sleeves with rubber elastics to hold them tight on the arm, and my smoker in hand, I am ready to go among them as bold as you please.

It is a pleasure to work with bees, and in some way I seem to have a sympathetic feeling for the little fellows, so industrious, so cleanly and methodical. I am amazed at their apparent intelligence, yet we do not know whether it is intelligence or what force it is which makes them such wonderful creatures.

It is with reluctance that I leave off watching them in their busy flight, coming home and going a-field; and then when the lid is off the hive, to see them so intent on their work, with no confusion amidst the thousands of them, each busy with his own part in the hive.

Many town and city people could, if they only knew it, keep several colonies of bees to their pleasure and profit, affording a study of Nature, and supplying their table with what is now a costly luxury to them.

Besides, the multiplying of bees in the country adds to the productiveness of fruits and flowers by the sureness of pollinization of their bloom. Of course, they require a certain amount of care. Everything that is worth while requires care; but the work is of that light kind that either man or woman can attend to it without great effort.

I hope to increase my number of colonies to two or three dozen, for I find a ready market at good prices for more than I can produce, my 445 pounds being now nearly all gone, and no search has been made for a market at all. W. D. STAMBAUGH.

Richfield, Neb.

Experiences With Foul Brood

I will give you my experience in dealing with foul brood. I had 30 prosperous colonies in 1912. In May of last year I examined my bees and found several very weak and quite a quantity of dead larvæ in many. I thought it was from fruit spraying, so I changed good frames of brood from strong colonies with the weak, and gave the disease to all the bees I had. Some time in June I examined them and found no improvement. It then dawned on me that it was foul brood.

In May, 1913, I shook 2 and 3 colonies together, and reduced to 11 in all. I made a large zinc vat that would hold 3 hives, and boiled the hives, and used care not to let the bees get any of the honey. Now, the 11 gathered about 600 pounds of honey during June, but on examination I find some have foul brood yet. I am wondering if the bees will get rid of it before they all die. I have read about foul brood all my life, and I am 53 years old, but to have the experience it is quite different.

I will say for the benefit of those who have never had foul brood, the half has never been told; how sneaking and hard it is to get rid of it. It seems with all the care and caution of the bee journals, it would be easy to cure; but reading about it is one thing and curing it is quite another.

Exeter, Mo. W. P. BROWNING.

Another Poor Report from California

We have had two poor years; this year is the poorest of all. No doubt we will have to feed some the latter part of the winter. We live in the mountains, 2½ miles from the coast in Ventura county, in a small valley called Casitas. Our honey-plants are different kinds of sage, some mustard, wild buckwheat and wild alfalfa, but when the sage is in bloom and yields nectar the bees will leave everything for that.

We have been here three years. The first year we secured 130 pounds per colony, spring count; the second year, 20 pounds per colony; the third year nothing. We are permanently located here, and can raise all kinds of fruit. The elevation is 900 feet above sea level, and on this account apples do well, much better than at sea level. We also have the finest climate imaginable. We do not irrigate. We have one month of open season on deer, and the boys have already killed two. Mountain quail, bobcats and foxes are also plentiful. A. L. DUPRAY.

Carpinteria, Calif., Sept. 2.

Prospects Better

The fine rains we have been having lately will insure us something of a fall flow of honey, I believe. The bees are building up fine now, and some are storing a little.

Salem, Iowa, Aug. 19. J. W. STINE.

Good Clover Flow in Ohio

Bees did fine this season, and we had a very good flow from clover, but basswood is nil. J. C. MOSGROVE.

Medina, Ohio, July 13.

Bees and Honey in the Far East

I saw bees in many places at Jericho, near the Jordan river, north of Jerusalem, on the way up to Nazareth; again at Haife, near Mt. Carmel, and later in Greece and Italy.

Honey was offered us regularly at the hotels in Jerusalem, Jericho, Nabalus, Nazareth and Tiberias. It was of good quality everywhere. It reminded one of the description of the land as one that flowed with milk and honey. J. J. NAGEL.

San Rafael, Calif.

Good Average for Iowa

We have a heavy honey-flow here even yet some days from clover, and bees have averaged about 150 pounds up to date per colony, spring count. Crops are also good, especially corn. J. O. KRAMER.

Hospers, Iowa, July 28.

Clover Very Abundant

My wife and I have just extracted a little over 3000 pounds of the finest white clover honey, and the supers will soon be full again, many of our colonies will average over 100 pounds. Never since I kept bees have I seen clover so abundant as this year. G. A. BARBISCH.

La Crescent, Minn., July 22

No Surplus at All

Not one pound of surplus from over 100 colonies this season. B. W. BROWN.

Moreno, Calif., Aug. 11.

A Ton from Nine Colonies, Spring Count

Had a good season here this year. I had 8 colonies last fall. They all wintered nicely. I bought one more colony this past spring, which made me 9. I have increased to 10 this season, and all are in fine condition. I will get over a ton of honey this year; 1500 pounds is in sections 4¼x1½, and the balance in extracting frames. The combs were built this season. GEO. H. ELSKAMP.

Maurice, Iowa, Aug. 14.

Praise for Dr. Phillips

I do not agree with Dr. Bonney, page 238, in reference to Dr. Phillip's investigations of the cause of winter losses. If we followed Dr. Bonney, would it not be better to go back to the old box-hive or gum? The modern hive is an advantage over the old methods; you really receive more, and a better quality of honey by the modern methods of bee-keeping.

It must be understood progressive bee-keeping assists Mother Nature occasionally. If there is a shortage of natural food supplies the bee-keeper steps in and supplies the shortage to his bees. If the winter is severe the progressive bee-keeper has not waited to find the intent of Mother Nature for that winter. He has early in the fall, and every fall, given his bees protection in some manner. It may be cellaring, chaff-hives, outer covering or tenement hives, but by whatever method he has done to the best of his ability. Now if a heavy loss occurs what is he to do, blame Providence or the natural laws of Nature? All weaklings do this. Should he blame himself? Was he to blame? Who really knows the true cause of winter loss? If there be such a man, let him not hide his light under a bushel. We bee-keepers are awaiting the man who can show us.

I do not know, and I am not from Missouri, but I have confidence in Dr. Phillips, as I have confidence in his Bureau. The bee-keeping world worked over the cause of foul brood for many years—yet it was the Bureau of Entomology, conducted by Dr. Phillips, who ran the true bacillus to its lair, and we now know the bacteriological cause of foul brood. If Dr. Phillips thinks he can overcome the excessive winter losses of bees, the bee-keepers should be with him to a man. This work is no work for the layman; it necessarily will take months or years of hard study and work. It is likely that not one thing is the cause of winter loss, but many.

The individual bee-keeper has neither the ability, time, nor the money necessary to conduct such a work, and we should thank our stars we have such a progressive head working for us at Washington. I do not think the bee-keepers at large realize the good work which has been done for us by this Bureau. Those who do should acknowledge the fact by writing to the Department of Agriculture, to commend the good work accomplished by the Bureau of Entomology in behalf of apiculture.

Swarthmore, Pa. Penn G. Snyder

Classified Department

[Advertisements in this department will be inserted at 15 cents per line, with no discounts of any kind. Notices here cannot be less than two lines. If wanted in this department, you must say so when ordering.

BEES AND QUEENS.

Phelps' Queens are hustlers.

Nutmeg Italian Queens, leather color. After June 1, $1.00. A. W. Yates, Hartford, Conn.

Bees and Queens from my New Jersey apiary. J. H. M. Cook, 1Atf 70 Cortland St., New York City.

For Sale—Choice Golden Quéens that produce Golden bees equal to any.
Wm. S. Barnett, Barnett's, Virginia.

Phelps' Queens will please you.

Day-old Virgin Queens will please you. Good way to get fine Italian stock; 50 cents each; $5.00 per doz. Untested, $1.00. Tested, $1.50. Geo. H. Rea, Reynoldsville, Pa.

For Sale.—Untested queens that produce, 75c; tested, $1.00; hybrids, 30c. S. H Rickard, 8A3t 506 Machesney Bldg., Pittsburg, Pa.

Will Sell untested Goldens during September and October for 50 cts each, or six for $2.50. J. T. Elkinton, Jennings, La.

For Sale—Golden untested queens 70 cts each, or $7.25 a dozen. Safe arrival guaranteed. D. F. Talley, R.F.D. 4, Greenville, Ala.

Queens — Improved red-clover Italians, bred for business; June 1 to Nov. 15. Untested queens, 75c; select, $1.00; tested, $1.25 each. Safe arrival and satisfaction guaranteed. 1A1y H. C. Clemons, Boyd, Ky.

Hardy Northern-reared Queens of Moore's strain of Italians; ready June 15. Untested, $1.00; 6 for $5 00; 12 for $9.00. See testimonial on page 210. P. B. Ramer, Harmony, Minn.

Choice Queens from June to Sept. 1 at $1.00 each; six for $5.00. Place orders now, and have them filled in rotation. 5Atf
D. J. Blocher, Pearl City, Ill.

For Sale—5 to 10 colonies good Italian Bees of Doolittle strain in Danz. Hives. Will take Barnes' Power Saw in exchange, if suitable and in good shape. Edw. L. Hall, 1706 Forres Ave., St Joseph, Mich.

For Sale—About 30 colonies of bees and a large lot of bee-supplies. There will be a carload of the bees and supplies. Will sell cheap, as I am going out of the business. Write for particulars.
Edwin Bevins, Leon, Iowa.

The Rush for Phelps' queens has been so great that we will be unable to take care of any more orders this year. We have some of the finest breeders for next year that you ever saw. Give us your orders early. C. W. Phelps & Son,
Binghamton, N. Y.

Golden and 3-band Italians, also gray Carniolan queens. Tested, $1.00 each; 3 or more 90c each. Untested, 75c each; 3 to 6, 70c each; 6 or more, 65c each. Bees per lb, $1.25; nuclei per frame, $1.50. A discount on orders booked 30 days before shipment 3Atf
C. B. Bankston, Buffalo, Leon Co., Tex.

For Sale—Choice virgins, 40 cts. each, 3 for $1.00; untested, 60 cts.; tested, $1.25; breeders, $2.50, Italians or Carniolans.
Stanley & Finch, 1451 Ogden Ave., Chiciago.

Special — Golden-all-over queens that produce workers of the brightest kind. 5000 mated queens was my sales last season. Untested queens each 75c; 50, $32 50; 100, $60.00. Tested, $1 25. Select-Tested, $2 00. Breeders, $5.00 and $10.00. J. T. Dunn, Queen Breeder,
6A7t Rt. 3, San Jose, Calif.

Golden Queens that produce Golden Workers of the brightest kind. I will challenge the world on my Goldens and their honey-getting qualities. Price, $1.00 each. Tested, $2.00; Breeders, $5.00 and $10.00.
2Atf J. B. Brockwell, Barnetts, Va.

Murray's famous North Carolina bred Italian queens (red clovers and goldens) for sale again. As good as the best; no foul brood known. They are as good honey gatherers as can be obtained, and winter as well. My improved strain is carefully selected, and bred up from Moore's, Root's, and Davis' improved stock. Select untested, one, 75c; doz., $8.00. Tested, $1 25. Select tested, $1.50; extra select tested, $2.00. Breeders, $3.00 and $5.00.
H. B. Murray, Queen-breeder, Liberty, N. C.

HONEY AND BEESWAX

"Null's Famous Melilotus Honey." Sample for stamp. Null Co., Demopolis, Ala.

Extracted Honey, thoroughly ripened. Write E. C. Pike, Box 10, St. Charles, Ill.

Wanted to buy Extracted Honey. Kindly send price and sample.
G L, 2252 Belmont Ave., Chicago, Ill.

Wanted—Comb, extracted honey, and beeswax. R. A. Burnett & Co.,
6A12t 173 S. Water St., Chicago, Ill.

For Sale.—Fine, Rich, Pure White Clover Honey; also Light Amber Alfalfa. Put up in any size packages, any quantity. Write for prices.
11Atf Dadant & Sons, Hamilton, Ill.

Dealers and producers who buy honey, kindly ask for a late number of the Review, giving a list of members having honey for sale. Many carloads are listed in the October number. Address, 9Atf
The Bee-Keepers' Review, Northstar, Mich.

For Sale—No. 1 white comb, $3.50 per case; No. 2, $3.00, 24 sections to case; six cases to carrier; clover extracted, two 60-lb. cans to case, 9 cents. 9Atf
Quirin-the-Queen-Breeder, Bellevue, Ohio.

For Sale—Our crop of "Elite" white clover extracted honey. None better produced. Also, Raspberry extracted, blended with willow-herb, nearly as white as the clover, good body and flavor, 8c per pound. Sample of either free. Address,
E. D. Townsend & Sons, Northstar, Mich.
(Formerly at Remus.)

20,000 Pounds of Honey for sale. Buckwheat, goldenrod, aster blend. $8.40 per case. This is dark honey (golden). Clover, milkweed, raspberry blend of good body; but off a little in color and flavor, $9.00 per case. Above honey all in new 60-lb. cans and cases. 120 pound net to case. Sample upon request.
9A2t Ira D. Bartlett, East Jordan, Mich.

Dittmer's Foundation

Is the **Comb Foundation** made to **suit the Honey Bee.**

It's the **Comb Foundation** that helps produce the **full capacity honey crop.**

It's the **Comb Foundation** to give your **Honey Bees.**

Ask for more information; also prices and **FULL DISCOUNT** on all Bee-Supplies.

Gus Dittmer Company
Augusta, Wisconsin

FOR SALE

For Sale—Empty second-hand 60 lb. cans—two cans to the case, good as new, 25 cents per case. C. H. W. Weber & Co., 2146 Central Ave., Cincinnati, Ohio.

My Entire Apiary of 175 colonies Italian bees with complete outfit for running same for comb honey; also International Harvester Auto Truck. Selling on account of sickness. J. S. Shatters, Fort Lupton, Colo.

For Sale—130 stands of bees with or without fixtures. Bees in good 8-frame hives Hoffman frames, mostly wired. No disease. Owner died. Inspected by State Entomologist. Write. Mrs. Ida McCauley, Rt 2, Madison, Ind

For Rent——An 80 acre small fruit and bee farm, with 75 stands of bees and fixtures suitable for running same. Six room frame house, new Two good barns and outbuildings; 40 acres in pasture; tobacco land. A man with small family; experienced in care of bees preferred. Must give best of reference. Write. Mrs. Ida McCauley, R. D. 2, Madison, Ind

SUPPLIES.

Bee-Supplies—none better. 35 years of experience.

1 Ideal Winter-Case, complete	$2.50
100 Hoffman Brood-Frames in flat	2.50
500 No. 1 Sections	2.50
100 Section-Holders, scalloped	2.00
100 Section Slats, ½ inch	1.00
1 Champion Smoker	.70
Dadant's Foundation.	
Medium Brood, per pound	.59
Thin Surplus " "	66
Extra Thin " "	69

Discount on larger amounts.
Satisfaction guaranteed or money refunded. R. H. Schmidt, R. R. No. 3, Box No. 209, Sheboygan, Wis.

Bee-Keeper, let us send our catalog of hives, smokers, foundation, veils, etc. They re nice and cheap. White Mfg. Co., Greenville, Tex. 4Atf

POULTRY

For Sale — Buff Orpington eggs, pure bloods: $1.00 for 15. Satisfaction guaranteed. W. H. Payne, Hamilton, Illinois. 2A1y

HONEY LABELS

The Number of enquiries coming in for honey labels has been so large that we have decided to put in a stock of these for the convenience of our readers. Should you be in need of anything in this line, send for a copy of our label catalog, which will be sent free. American Bee Journal, Hamilton, Ill.

SITUATIONS.

Young Married Man wants steady employment in apiaries; 12 years' experience. Furnish best of references. Will go anywhere. Newton Cale, Rt. 1, B. 88, Floresville, Tex. 8A3t

Wanted—Experienced Apiarist to help pack bees for winter, and to get ready for next season. May develop into steady work for a year or more. E. H. Bruner, 3836 North 44th Ave., Chicago, Ill.

IF YOU are having trouble trying to live by eating by eyesight, send for my circulars and receive a slice of eating by brainsight.

C. W. DAYTON, Owensmouth, Cal.
The Ripe Honey Man

New Bingham
Bee Smoker
Patented

Bingham Bee-Smokers

are self-cleaning, as the cover sits inside the fire-pot; the liquid creosote runs back into the fire and burns up. The valve in the bellows gives you a Smoker with life.

Smoke Engine	4	inch stove	$1.25
Doctor	3 1-2	" "	.85
Conqueror	3	" "	.75
Little Wonder	2 1-2	" "	.50

Two larger sizes with metal legs and hinged cover. In copper, 50c extra.

Parcels Post shipping weight, 2 pounds each. For sale at your dealers or direct

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THE WESTERN HONEY BEE

A new magazine owned and run by the bee-keepers, filled with Western life as depicted by the best talent on bee topics obtainable. Special department on crop and market conditions during season.

ADVERTISERS
Queen-Breeders' Department
1 inch, $2.00 per issue
Classified, 15c a line
Write for particulars

Published Monthly by the
California State Bee-Keepers' Ass'n
Los Angeles, Calif.
GEO. L. EMERSON, Manager
3497 Eagle Street

Honey Labels

Owing to the many enquiries we have had for Honey Labels, we have put in a line of these for the convenience of our readers.

Send for catalog, giving samples of labels with postpaid prices. We also list **Envelopes and printed Letter Heads.**

American Bee Journal, Hamilton, Illinois.

"Falcon" QUEENS

Three-Band and Golden Italians, Caucasians and Carniolans

July 1st to October 1st	1	6	12
Untested - - -	$ .75	$4.25	$ 8.00
Tested - - -	1.00	5.50	10.00

Tested, $1.50 each; and Select Tested, $2.00 each.

All queens are reared in strong, vigorous colonies, and mated from populous nuclei. Instructions for introducing are to be found on the reverse side of the cage cover.

OUR BRAND OF FOUNDATION

"Falcon" foundation is coming in more constant use every year, being adopted by the largest and most prominent bee-keepers in this country, to say nothing of those in foreign lands where our foundation is largely used. We feel confident that after you have used one lot of **"Falcon"** foundation, which is made in our plant at Falconer, N. Y., you will purchase it in the future, and are sure that you and your bees will be pleased with it in every respect.

Full line of hives, sections, and supplies manufactured by us at Falconer, N. Y. Write for samples of our foundation.

All goods guaranteed. A trial will convince you. Red Catalog postpaid.

Central States distributers: H. S. Duby, St. Anne, Ill., C. C. Clemons, Bee-Supply Co., Kansas City, Mo.

FACTORY W. T. FALCONER MFG. CO., - Falconer, N. Y., U. S. A.

Where the good bee-hives come from

HONEY

CANS and PAILS

Our Friction-top Honey-cans, Slip Cover pails, Honey Shipping cans, Round and Square, are standard containers for honey.

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With offices in all large cities

The Bee-Keepers' Review

would like to add a thousand new subscribers to its list for 1914, and is going to offer special inducements to get them. Listen: The April and May numbers contain the report of the National convention at Cincinnati, Ohio, and in themselves contain 96 pages. The last half of 1913 contains the series of articles, "3000 Colonies in 50 Yards Managed from One Office;" besides many other interesting articles that space forbids mentioning. We are printing 400 extra copies of the Review for the last half of the year on purpose to give to new subscribers, and as long as they last we will give the April and May numbers containing the convention report, the last half of 1913, and all of 1914, for an even dollar. You have likely been thinking for some time that you would like the Review, and this will be an opportune time to get it at bargain-counter price.

Address, The Bee-Keepers' Review, Northstar, Mich.

We Make a Specialty of Manufacturing

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They are the Finest in the Land—None Better.

Our Prices will make you smile. We want to mail OUR BEE-SUPPLY CATALOG to every bee-keeper in the land. It is FREE. Ask for it.

H. S. Duby, St. Anne, Ill., carries a full line of Our Goods, and sells them at our regular catalog prices.

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Please mention Am. Bee Journal when writing.

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We carry several styles of honey jars, and would be pleased to mail you our catalog of everything a bee-keeper uses. 25-pound jar, heavy flint glass, $4.75 gross.

Heavy cartons that protect. Honey in any size package from 1 pound to a barrel.

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105 Park Place, New York, N. Y.
APIARIES: Glen Cove, L. I.

W.H.Laws

Will be ready to take care of your queen orders, whether large or small, the coming season. Twenty-five years of careful breeding brings Laws' queens above the usual standard; better let us book your orders now.

Tested queens in March; untested, after April 1st. About 50 first-class breeding-queens ready at any date.

PRICES: Tested, $1.25; 5 for $5.00; Breeders, each $5.00. Address

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There is a demand for Friction-top Cans and Pails packed in dozen and half dozen re-shipping cases. We have prepared to take care of this demand at the following prices, f. o. b. Hamilton, or Keokuk, Iowa:

	In lots of 10.	In lots of 100
Cases containing 6-10 pound pails, per case - - - -	75c	70c
" " 6-5 " " " " - - - -	45c	40c
" " 12-5 " " " " - - - -	62c	58c

F. O. B. Hamilton, or Keokuk, Iowa.

	100 or more.	500 or more
10 pound pails in crates of 100 - - - - - -	$7.25	$6.75
5 " " " " - - - - - -	5.50	5.00

F. O. B. Hamilton, or Keokuk, Iowa.

	In lots of 10.	In lots of 100
60 pound square cans, two per case - - - - - -	80c	65c
60 " " " one " " - - - - - -	48c	40c

F. O. B. Hamilton, or Keokuk, Iowa.

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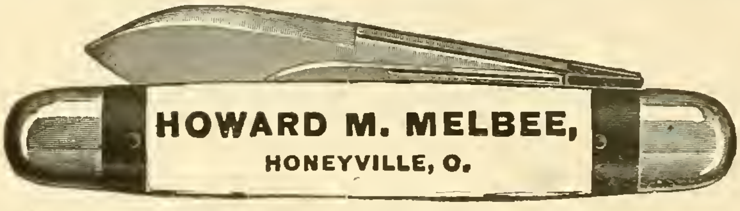
Big Stock—Immediate shipment on receipt of orders

DADANT & SONS, - - Hamilton, Illinois

BEE-KEEPER'S NOVELTY POCKET-KNIFE



Your Name and Address will be put on one side of the handle as shown in the cut, and on the other side a picture of a Queen-Bee, a Worker-Bee, and a Drone-Bee. The handle is celluloid, and transparent, through which is seen your name. If you lose this Knife it can be returned to you, or it serves to identify you if you happen to be injured fatally, or rendered unconscious. The cut is the exact size; it is made of best steel. When ordering be sure to write exact name and address. Knife delivered within two weeks after we receive order.

Price, postpaid, $1.00; or with a year's subscription to the American Bee Journal—both for $1.80; or given FREE as a premium for sending us 3 New subscriptions at $1.00 each.

American Bee Journal, Hamilton, Illinois.

GOLDEN ADEL QUEENS

AND BEES BY THE CAR LOAD

You will make money if you deal with me and get my factory price on Bee Supplies. I have millions of fine Sections. I am the oldest and largest Bee Supply manufacturer in the Northwest. Send for Catalog.

CHARLES MONDENG,
145 to 160 Newton Ave. N.
MINNEAPOLIS, MINN.

Try My Famous Queens

From Improved Stock.

The best that money can buy; not inclined to swarm, and as for honey gatherers they have few equals.

3-Band, Golden, 5-Band and Carniolan

bred in separate yards, ready March 20. Untested, one, $1; six, $5; 12, $9; 25, $17 50; 50, $34; 100, $65. Tested, one, $1.50; six, $8; 12, $15. Breeders of either strain, $5. Nuclei with untested queen, one-frame, $2.50; six one-frame, $15; two-frame $3.50; six two-frame $20.40; nuclei with tested queen, one-frame, $3 00; six one-frame, $17.40; two-frame, $4; six two frame $23.40. Our Queens and Drones are all reared from the best select queens, which should be so with drones as well as queens. No disease of any kind in this country. Safe arrival, satisfaction, and prompt service guaranteed.

D. E. BROTHERS, Attalla, Ala.

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Discount and Dull Season

is here. Send us a list of goods wanted for next year, and get our prices—a money saving proposition. We have the largest, most complete and best stock of any House visitors welcome Catalog ready in January—it's free. **H. S. DUBY & SON,**
St. Anne, Illinois.

Early (FROFALCON) Queens "ITALIANS"

Untested Queens to June 1st $1.00 each. After June 1, 90c each. Special prices in large quantities. A 5-pound bucket of Orange Blossom Honey delivered at your door by express for $1.10.

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Falcon Bee-Supplies, etc.

Please mention Am. Bee Journal when writing

ROOT'S POWER HONEY-EXTRACTORS

Our new catalog is full of information about these labor-saving machines. With the difficulty of getting competent help, the power extractors are being sold largely in this and foreign countries, and the present demand is far greater than ever before. Read what a California producer says in a letter to a disinterested party, which we were permitted to publish:

GENTLEMEN:—I should like to say a few words in favor of the ball-bearing Root Automatic Extractor, as I believe it is as near perfection as it can be. This machine runs so easily that a few turns to get it up to speed is all that is necessary; and the men, while using the No. 17, which I formerly had, could average only 1000 lbs. per day, while with this machine they can average 2000 lbs. with but one additional man. No apiary can afford to be without one of these machines.

I feel like congratulating The A. I. Root Co. for making an invention that is such a satisfaction, financially to the honey-producers interests.
B. B. HOGABOOM, Elk Grove, Calif

—HERE ARE A FEW MORE—

A word about the power extractor I purchased from you through H. L. Jones, of Goodna. I found it to work very satisfactorily, and it will do all it is claimed to do and more. I use the gasoline engine for several purposes besides driving the eight-frame extractor, such as driving the washing-machine for the lady of the house, and corn cracking and grinding. I consider it one of the best speculations I made in connection with the apiary.
F. C. GOLDER, Pittsworth, Queensland.

Yours of the 16th, also the brake-band for power-extractor, came to hand. Thanks for sending it so promptly. This is my second season with the power extractor. I would not like to be without it now, even if I had only fifty colonies.
DAVID RUNNING, Grindstone City, Mich., July 10, 1910.

I received the extractor I ordered of you some time ago. It arrived in good shape. I set it up and extracted 143 quarts of honey, sold it at 35 cents a quart. The extractor is just fine—does the work completely.
F. D. KING, Athens, Ohio, Aug. 10, 1912.

The engine I got of you this spring has done fine. We ran it all fall, and never had any trouble at all.
V. V. DEXTER, North Yakima, Wash., Jan. 19, 1911.

For Full Particulars See Our Catalog

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Missouri	Blanke Mfg. & Supply Co., St. Louis
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RAMER'S QUEENS

Of Moore's Strain of Italians

Ready June 15

Untested, $1.00; 6 for $5.00; 12 for $9.00

April 28, 1913.

P. B. RAMER, Harmony, Minn.—

Dear Sir:—The 30 queens I got of you in 1911 were the best queens; built up the fastest, and gave the largest yield of honey I have had in twenty years of bee-keeping. My average was 160 lbs. to the colony in 1912, and I lost a part of the flow for want of super room.

Yours very truly,
HALVER J. HALVERSON.
Rt. 4, Preston, Minn.

QUEENS OF MOORE'S STRAIN OF ITALIANS

PRODUCE WORKERS

That fill the supers quick
With honey nice and thick.

They have won a world-wide reputation for honey-gathering, hardiness, gentleness, etc. Untested queens, $1; six, $5; 12, $9.00. Select untested, $1.25; six, $6.00; 12, $11. Safe arrival and satisfaction guaranteed. Circular free

I now have 750 nuclei, and am filling orders by return mail.

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Fine Yellow

Italian bees & queens. If you need a fine yellow Queen quick, try Fajen and you will order more. Extra fine queen, only $1.00; untested, 75c. 3-fr nucleus, only $2.75. Full colony in 8-fr. hive with fine tested queen, $5.50.

J.L.Fajen, Stover, Mo.

WESTERN BEE-KEEPERS can save honey and get the best goods obtainable, especially made to meet Western condition. Send for new catalog and special price list to

Colorado Honey-Producers' Association
Denver, Colorado

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is the best, handsomest and most valuable fruit growers' paper published in the world It is handsomely illustrated and shows the Western methods which have been so successful in winning high prices.

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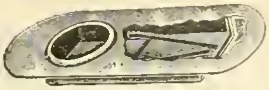

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ITALIAN AND CARNIOLAN QUEENS

for FALL DELIVERY.

The best of either RACE

Prices: 75 cts. each.

$8.00 per dozen.

GRANT ANDERSON
San Benito, Texas

HONEY AND BEESWAX

CHICAGO, Sept. 18.—The market during the past six weeks has been practically one of large receipts and few sales. It is difficult now to place the best grades of comb honey at more than 17c per pound, with the majority of the receipts selling at 15@16c per pound. The amber grades range from 1@3c per pound less. The weather has been too warm up to this time to place honey with the general trade, but now that the peach season is drawing to a close, there is a probability of a much more active market. Extracted honey is also quiet with the white grades, bringing from 8@9c per pound; amber, 7@8c per pound, according to kind and quality. Extracted in barrels is selling at from ½@1c per pound less than in cans, as the trade no longer wants it in that shape. Beeswax steady at from 30@32c per pound, according to color and cleanliness.

R. A. BURNETT & CO.

KANSAS CITY, MO., Sept. 17.—Receipts of comb honey are large. Three cars of western comb are on the market, beside local shipments. The demand is good. Receipts of extracted are not large; demand fair. We quote as follows: No. 1 white comb, 24 section cases at $3.15 to $3.25; No. 2, $3.00; No. 1 amber, $3.10; No. 2, $2.75 to $3.00. White extracted, per pound, 8@8½c; extracted amber, 7@8c. Beeswax, No. 1, 30c per pound; No. 2, 25c.

C. C. CLEMONS PRODUCE COMPANY.

INDIANAPOLIS, Sept. 18.—Honey is moving freely. Fancy white comb is selling at 16@17c; No. 1 white, one cent less. Finest extracted, 9@10c in 5-gallon cans. Beeswax is in good demand, and producers are being paid 32c, cash or trade.

WALTER S. POUDER.

CINCINNATI, Sept. 18.—The demand for both comb and extracted honey is not as brisk as it should be for this time of the year. We are receiving quantities of both comb and extracted honey. Fancy white clover comb honey is selling at 16c per pound. No. 1 white is selling at $3.50 a case of 24 sections. Off grades do not sell. Extracted white clover honey in 60-pound cans is selling from 9@9½c per pound. Amber grades are selling from 7½@8½c per pound, according to grade and quantity purchased. Beeswax is selling from $33 to $35 per 100.

The above are our selling prices, not what we are paying. C. H. W. WEBER & CO.

CINCINNATI, Sept. 19.—The crop of honey throughout the State is greater than one can imagine. While the prices are sagging some, it is only a question of having the nerve to hold up the price. We are still selling comb honey at 14@16½c per pound for a good to choice grade; while amber extracted honey in barrels is selling at 6½@9c per pound, according to the quality and quantity purchased. Please observe the above are our selling prices, not what we are paying. For choice bright yellow beeswax we are paying 30c per pound delivered here.

THE FRED W. MUTH CO.

SAN FRANCISCO, Sept. 10.—Comb honey has been coming in, and the demand is very light, owing to plenty of fruit. Extracted is moving slowly. Comb honey, fancy, 14½c; No. 1, 13c; light amber, 10@12c; darker grades 8@11c. Extracted, water white, 9c; light amber, 7½@8c; other grades, 5@7c. Beeswax, 30c for nice yellow; darker grades, 24@26c. JOHN C. FROHLIGER.

BOSTON, Sept. 19.—Fancy and No. 1 white comb, 16@17c per pound. New fancy white extracted in 5-gallon cans, 10@11c. Beeswax, 30c. Pure white honey in barrels, 9c per pound. BLAKE.-LEE COMPANY.

DENVER, Sept. 18.—The honey crop in northern Colorado has been good. We quote our market in a jobbing way as follows: No. 1 white comb honey per case of 24 sections, $3.05; choice, $2.88; No. 2, $2.75; white standard, 8@9c; light amber, 7@8c; strained, 6½@7c. We pay 26c cash, and 28c in trade, for clear yellow beeswax delivered here.

THE COLO. HONEY-PRODUCERS' ASS'N.,
Frank Rauchfuss, *Mgr.*

LOS ANGELES, Sept. 15.—Since writing on June 30, quoting light amber honey at 6⅛c, we have received a good many offerings from the producers, and it is possible that the price named could be shaded an eighth of a cent per pound on firm offers.

HAMILTON & MENDERSON.

NEW YORK, Sept. 19.—The new crop of comb honey is now beginning to arrive quite freely; the demand is good for all grades, and we quote a fancy white at 16c, and some especially fine lots will bring 17c. No. 1 white at 14@15c; No. 2, 13c; mixed, dark, and buckheat at 11@12c per pound. Extracted is in fair demand, with sufficient supply of all grades excepting California sage. We quote white clover at 8@9½c, according to quality; light amber, 7½@8c; dark, mixed, and buckwheat, 7@8c; southern in barrels, as to quality, 70c@80c per gallon. Beeswax steady at 32c per pound. HILDRETH & SEGELKEN.

An Active Season is Here!

A carload of perfectly new goods is just on hand from the factory, and another car is expected any day, and the factory has booked us for four cars. This brings up our assortment so that we can now furnish almost anything listed in the catalog at once.

Hives should be ordered at once if they are to be ready for swarms. Frames, and other inside fixtures, too, should be put together now.

If you are wanting any special goods, orders should be made at once. Other cars are coming regularly from the factory, and we can save you considerable in transportation charges by having your goods come with ours in the car.

The mailing of our new catalog was completed some time ago. If you are not on our mailing list send us a postal-card request for this catalog.

If you want to buy in quantities considerably larger than quoted in the catalog, give us a list of your needs and we will quote price accordingly.

If you have never tried Root quality goods, make a beginning this season. You will not be disappointed in results. Our branch is maintained for service in this line and we can give it to your entire satisfaction.

We are sole agents in Ohio for the Roller Tray Incubator and Brooder—the best in the market. Write for our catalog.

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"If goods are wanted quick, send to Pouder."

BEE-SUPPLIES

EQUIPMENT Store room built expressly for the business; large concrete basement with just enough moisture to prevent breakage in sections; no shrinkage in dovetailed corners of supers and hives.

QUALITY Root goods at factory prices. The kind that I have sold for nearly a quarter of a century, and the kind that you can afford to recommend to your neighbors. I might have increased my profits for a short time by handling other goods, but I would not have remained so long in business. Many articles in my catalog can reach you by Parcel Post, and I assume all responsibility in safe delivery of the goods. Catalog free.

WALTER S. POUDER, Indianapolis, Ind.
873 Massachusetts Avenue

PAGE-KENKEL MFG. CO.

Manufacturers OF THE "NONE BETTER" BEE-KEEPERS' SUPPLIES

Thirty Years' Experience

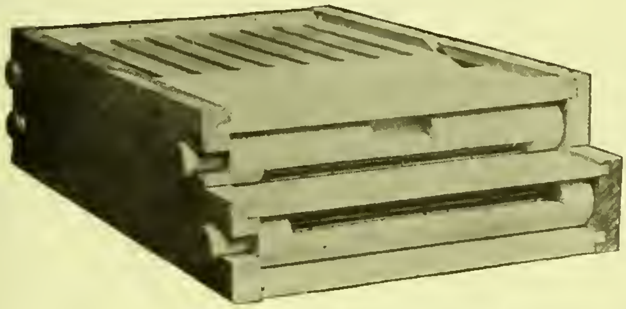
Perfect sections from young, white, basswood. White Pine Hives and Supers. Excellent Shipping-Cases, Brood-Frames, Separators, etc.
We invite your correspondence.

Page-Kenkel Manufacturing Co.,
New London, Wis.

The Robbers Disturb You When Feeding

Easy Solution, Use the

Schamu Patent Roller Entrance HIVE BOTTOM



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Proper Ventilation for Honey Flow.

PRICES: $2.00 F. O. B. LIVERPOOL, FOR 8 FRAME SIZE.
$2.50 F. O. B. LIVERPOOL, FOR 10 FRAME SIZE.

Dr. Chas. G. Schamu, Liverpool, N. Y.

Am Now Shipping Untested [illegible] from My
CELEBRATED PEDIGREED STRAIN!

My bees are the product of many years of breeding by both Swarthmore and Henry Alley. Both names stand out like beacon lights among our past and present breeders, for the best queens ever produced in the United States. Never had foul brood.

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H. S. DUBY, St. Anne, Ill.

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Furnishing bee-supplies has been our business for 22 years. We are also honey-producers, operating several hundred colonies for honey. We have started many people who have made a success of the business. We still furnish them their supplies. They stick to us. You will if you get acquainted. We advocate only practical articles. Let us mail you our catalog of what you may need.

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105 Park Place, New York City
APIARIES: Glen Cove, L. I.

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It is published in Mitchell, South Dakota, and is a live paper devoted to the interests of better poultry and more of it. Has practical writers of experience in raising poultry. Well illustrated. Send for free copy.

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Prices, $30 to $35. Send $5.00 down and we will send the machine. **GREAT OPPORTUNITY.** Address,

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We are Western Agents for "FALCONER"

Write for Fall Discounts—we can save you money. 1Atf

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New York and Pennsylvania COMB Especially

Write us. State quantity, quality, style of sections, when ready for shipment, etc. Will buy or handle on commission.

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DADANT'S FOUNDATION

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Send for our prices

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Why ? Because of the tremendous demand for

Dadant's Foundation

Write at once. We will quote you F. O. B. here or
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AMERICAN BEE JOURNAL

Mass Agl College apr18
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NOVEMBER

1913

AMERICAN BEE JOURNAL
ESTABLISHED IN 1861
OLDEST BEE PAPER IN AMERICA

PUBLISHED MONTHLY BY
American Bee Journal
1st Nat'l Bank Bldg. Hamilton, Illinois

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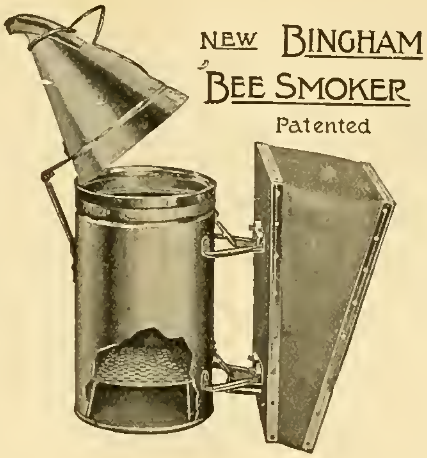

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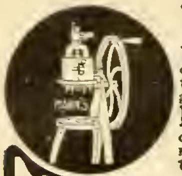

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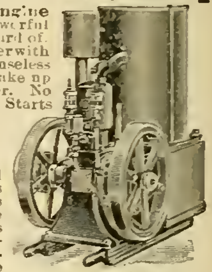

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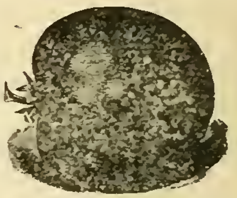

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(Entered as second-class matter at the Post-Office at Hamilton, Ill., under Act of March 3, 1879.)

Published Monthly at $1.00 a Year, by American Bee Journal, First National Bank Building

C. P. DADANT, Editor.
DR. C. C. MILLER, Associate Editor.

HAMILTON, ILL., NOVEMBER, 1913 **Vol. LIII.—No. 11**

EDITORIAL COMMENTS

The New Scheme of the Two Doctors

The article on another page by Dr. Bonney cannot fail to attract attention. It is quite a coincidence that two beekeepers, each a physician, and each independently of the other, should have conceived the same idea. They are alike, too, in the fact that neither one has carried out this scheme so fully as to be entirely sure of its success. In Gleanings in Bee Culture for Oct. 1 is the article by Dr. G. A. Humpert, which is so closely resembled in principle by the article of Dr. Bonney that it might be supposed Dr. Bonney had been guilty of plagiarism. Such a thing, however, is entirely precluded by the fact that Dr. Bonney's article was received before the publication of Dr. Humpert's article, even supposing Dr. Bonney capable of plagiarism.

Dr. Humpert has devised a special machine for cutting out the plugs of honey, and then, just as Dr. Bonney, he puts them in the sections to be fastened in by the bees. He found them fastened into the section-frame within 24 hours, but not so well as in 36.

Only after a thing is fairly tried *by the bees* can any one be sure of its success or failure, and it might be well to suspend opinion until after another harvest gives opportunity for trial by all who are interested. Yet one would hardly be a beekeeper without discussing in advance anything in which such possibilities seem involved.

Very prominently, in the minds of many, will stand forth the thought of the much larger amount of honey produced in extracting frames as compared with sections, and then if we can have the extracting combs turned into sections by spending 15 to 30 seconds upon each section and submitting them to the bees for less than two days' time, we have made a great gain, unless, indeed, the revolution should be so great as to bring down the price of comb honey to the level of extracted. Dr. Bonney says: "The bees will produce more honey in extracting frames than in sections." That's putting it very modestly. It is generally believed that 50 percent more extracted than comb can be produced. At any rate, there is generally a difference of at least 5 cents a pound between the price of comb and extracted. Now if by spending a quarter to half a minute, or even a full minute, on each section, we can gain that 5 cents; it's well worth while. Five cents a minute, or $3.00 an hour, is pretty good pay.

But a special factor in the case is likely to be overlooked. It is true that 50 percent more extracted than comb can be produced, but that is because with extracting combs the bees are saved the time and labor of building combs. Building entire combs and filling them is altogether another affair. Indeed, some might dispute whether bees build and fill combs any faster in frames than in sections. Others would say there is a difference, but the difference is very small. It is pretty clear that the extracted-honey argument must be thrown out of court.

The thing that remains is that with the new plan there will be no question as to sections being entirely filled with honey, and evenly filled; no half-filled sections when a flow stops. Some one will reply, "I get sections beautifully filled with the old plan, fastened in probably better than by any other plan, and have no more unfinished sections at the close of the season than I want for baits the next year." Such a beekeeper may not care to try the new plan. But all are not so fortunate. Dr. Bonney says that with him "the percentage of unfinished pieces was appalling, to the extent that I quit producing section honey." To him and others like him the next harvest will give opportunity for a full test.

Watch Your Second-Hand Cans

We have just received a letter from Mr. J. F. Diemer, of Liberty, Mo., in which he states that he purchased some honey from a commission house. The honey was put up in 60-pound cans, which were bright enough on the outside, but from the sample of tin sent us, were about "the worst ever" on the inside. Mr. Diemer stated that besides the rusty cans, there were so many bees, etc., in the honey that it was easy to tell that the producer was one who leaned towards black bees rather than Italians. Of course, this shows a careless beekeeper.

There are, however, many up-to-date beekeepers who put their honey in second-hand cans. It is regrettable that in some instances the proper precautions are not taken to make sure that the cans are bright inside. It is too bad to spoil high grade honey by packing it in a rusty can. It is bound to spoil the color and the flavor.

Do not necessarily give up the use of second-hand cans, but watch these cans carefully and "fire away" anything which looks the least rusty inside.

A View of the Pusocq in Gascony, Where Mr. and Mrs. Dadant Visited the Last of September—the Barnyard.

In the Land of the Heather and the Cork-oak.—Another View of Pusocq.

With the Editor in Sunny Southern France

When this letter is published in the Bee Journal we will have reached home. Yet it is written in the southwestern corner of France, some 6000 miles from home.

Some of our friends will perhaps wonder why we do not give successive and detailed accounts of all our travels. We propose to do it, for many of our readers have asked us for a full story of our trip. But it will be done only after we have reached home. We must be content now with a mere glimpse of some of the things we see.

This part of France is not far from Bordeaux, the country of vineyards and of the noted claret wines, the home of the warm-hearted and hot-blooded Gascons; close to the native heath of Cyrano De Bergerac, the famous hero made immortal by the pen of Rostand, in his half comical and half tragical play of the same name.

The country is rich, the valleys beautiful. The house from which this letter is written is an old castle, perhaps 500 or 600 years old. It is not a feudal castle with towers and battlements. Those evidences of the dark ages have been torn down many years ago, and the building is just a plain quadrangle with an inner court, a big porte-cochère stone column at the garden entrance, and a pretty avenue 1600 feet long, with trees on each side, leading in a gentle slope to the big automobile highway which crosses the plain below. This is the home of Mr. Couterel, the gentleman whose home apiary was pictured in the American Bee Journal of May, 1913. If you refer to the number in question, you will see by the orderly arrangement of everything that this gentleman is careful and neat. The house, though very old, with worm-eaten doors and rusty hinges is comfortable and hospitable on the inside, and everything has been done to make our stay pleasant. After 40 or more stops in various hotels, in noisy cities, along roaring streets, it is an indescribable pleasure to find one's self in absolute quiet, and to be able to sleep with only an occasional rooster crow in the distance to wake you.

It is hardly worth while to speak of the apiary which has been already shown. Mr. Couterel is very practical, uses our system of extracting supers, has his apiary well enclosed and well sheltered, and keeps his hives about 18 inches from the ground on platforms which rest across timbers laid flat. His bees are all of the common sort, but I believe that I have succeeded in inducing him to try the Italians, which have more value to me today than ever.

This is a good country for bees, for these fertile hills are close to the heather lands; so close in fact that we could ride there in a half hour; and so that Mr. Couterel's bees gather much honey from this great honey plant in the latter part of the summer. As most of my readers have never seen heather lands, they will be as much interested in them as I was, if I can only describe them in a sufficiently interesting fashion.

I had often heard of the "landes" of Gascony, but thought them low, sandy plains. They are rolling hills instead, and extend for scores of miles from here to the Gulf of Gascony.

The growth upon the "landes" is confined to numerous ferns, scrubby pines and cork oaks, with a very thick undergrowth of heather. Just now the heather is in its fullest bloom, and there are perhaps 20 different varieties, from the palest pink to almost red and deep yellow colors. It is a mass of flowers upon which the bees work from June 15 until frost. Frost in this region is very late, usually not until November. So we may readily call this the Eldorado of bee-keeping. There is only one dark side to the picture, the heather honey is dark in color, a deep amber, strong in flavor, and almost impossible to extract with the honey extractor. Here I ascertained positively that which I already suspected, that when speaking of nectar containing 75 percent of water, we should confine ourselves to the nectar of our moist prairies. I am told that much of the nectar harvested from heather, in this dry, sandy soil, is too thick at the end of the first day to be thrown out readily.

Mr. Couterel and his partner, Mr. Lanssucg, have an out-apiary right in the center of the heather land, and thither we repaired in a two-wheel cart, my wife sitting on the front seat by the side of our host, and myself in the back, while Mr. Lanssucg rode a bicycle. Bicycles are about as plentiful here as ox-carts, and the ox-cart is the principal vehicle. It is quite interesting to an American to see 2000 feet of pine lumber on a two-wheel cart, and drawn by a yoke of oxen, or even of cows, who balance the load and pull it with ease.

But let us reach the heather, through a beautiful straight road such as you see mainly in France. The trees are sparse and scrubby. The pines are all blazed for their sap, with a cup of some sort at the stump to receive the flow, which is poured into barrels and taken to the turpentine distillery, which I will describe in some other number; for it is also a honey and wax establishment.

The oak trees (cork oaks) are stripped of their precious bark once in about 10 years. Those which have been stripped this year have a reddish appearance, as if they had been painted. The bark removed is only the epidermis, so to speak, and the tree does not suffer much from its removal. In fact, after a year or two, when the bark has grown on again, the trunk looks smoother and cleaner than the upper limbs, for the old cork bark, which is never removed from the limbs, but only from the lower 10 or 12 feet, looks like the hide of a crocodile, or worse. This cork bark is hauled to a cork factory, a short distance away, and enters from there the channels of commerce. I was informed that the cork oak did not orignally exist in very large numbers in this region. It was planted there. In many places this fact is evidenced by the rows of trees which could not have grown so regularly in the natural way.

So the "landes" of France, which were once useless and barren, are now giving three crops which are quite profitable, turpentine and rosin, cork and honey.

We reached the out-apiary, situated away from the village, and surrounded simply with a high screen fence. I enquired whether they did not think the place rather in danger from thieves, but they explained that bees are plentiful all through the heather plains, that they are mostly in wicker baskets covered outside with cow-dung and clay, and that no one needs be afraid of honey thieves when honey is so plentiful. An hour or two later, at dusk, we rode to a primitive apiary, also located in the midst of the heather, containing about 100 hives (or rather baskets), and the bees had evidently harvested a good crop that day, for each hive was emitting a low roaring sound of ventilation and contentment, such as our own people have heard when white clover is in full bloom and the day has been fair.

This seems to me the ideal spot for bees. The peasants, who do not know anything about modern systems, still brimstone the old colonies every fall, keeping only the swarms, for they think they are thus keeping "the young bees." It is useless to tell them that the old queen goes with the swarm. They know better, and shrug their shoulders. Each brimstoned colony brings a return of about $20 at the factory above mentioned. As to the bees, if you want them, they will drive them out for you, and give you the naked swarm for 50 centimes, 10 cents of our money.

The Couterel out-apiary has two very interesting features, the hive-stands and the hive-roofs. The stands are round slabs of re-enforced concrete, 25 percent concrete mixed with 75 percent river gravel, with 4 wire hoops and 8 crosswise on the inside. The dimensions are 4 inches in thickness and 3 feet in diameter.

The roof is another slab of cement. But this is only about ¼ inch in thickness, and made of cement and asbestos (amiante in French). If any of our readers have ever seen the artificial slate manufactured by the F. W. John's Mfg. Co., in our States, they will have an idea of the strength and lightness of this sort of roof, which is made in sheets about 25 inches square and very fine. They cost here 17 cents each delivered at the station by the factory. One can have no idea of the neat appearance of an apiary thus supplied.

During our visit, a friend of our host, an amateur photographer, was kind enough to come and take our photographs in three different spots. We do not know whether these will reach home in time to be published with this letter. But the reader will lose nothing anyhow, for we expect to publish dozens of views which have been taken by friends in different parts.

We are getting badly spoiled, for we are welcomed and feasted, and invited and complimented everywhere. We did not realize that we could find so many friends in Europe. C. P. D.

In the Land of the Heather—Another View of the Pusocq.

Plurality of Queens

We call the readers attention to the articles in this number by Mr. Hand, Mr. Wood, and Dr. Miller, criticising the article by Edward F. Bigelow, in the October number.

Mr. Bigelow put forth the theory that very probably there was more than one queen that went with every swarm, and that nature had a purpose in supplying a plurality of queens for these swarms.

We feel very sure that Mr. Bigelow's experience has been with a limited number of colonies. and we have no doubt but that these colonies cast several swarms in the same season; that is, they sent forth a prime swarm and several after-swarms.

He intimates that if a swarm has but one queen, and this queen were lost, the swarm would perish. He loses sight of the fact that this swarm would have the alternative of perishing or returning to the hive from which it issued.

All well-informed beekeepers will agree that *some* swarms have more than one queen, while the most of us will also agree that there are many swarms which have but a single queen. Especially is the latter true where swarming is well controlled.

Where, then, is the dividing line between the swarms with a single queen and those with many. *Almost invariably prime swarms issue with a single queen.* Exceptions may be allowed as pointed out by Mr. Hand. *Secondary and last swarms may be accompanied by more than one queen.* The writer has in mind one instance when not less than seven virgin queens were found in one cluster. There are of course many instances where even the secondary and later swarms have but one queen. One of these is where the parent colony provides but two or three queen-cells to take the place of the old queen, which issued with the prime swarm.

The photographs given in the October number evidently are those of a last swarm. These often cluster in different places, and each cluster is usually so small that the whole, when put together, is too weak to form a good colony.

The articles in this number give a very good reason why drones go with a prime swarm. Any one at all acquainted with the habits of the drone recognize his fickleness, his aptness to make friends with any cluster of bees.

Our Cover Picture

Mr. R. H. Longworth & Son, of Polk City, Iowa, had a very fine exhibit of bees and honey at the Iowa State Fair. A partial view of it is given on our front cover of this issue. From one of the most backward States as regards making herself known in a beekeeping line, Iowa is fast taking the position she deserves. Under the leadership of her State Inspector and others there is no reason why this progress should not continue at a rapid rate.

MISCELLANEOUS NEWS ITEMS

W. D. Wright Writes New York State Bulletin.—"The Honey Bee" is the title of Bulletin No. 49, gotten out under the direction of the New York Department of Agriculture. The bulletin was written by Mr. W. D. Wright, of Altamont, and is very excellently gotten up and finely illustrated. No New York beekeeper should be without a copy of this bulletin. It deals not only with the natural history of the bee, a study of different bee appliances, but also has a very important chapter for the discussion of bee-diseases, with remedies, etc.

The bulletin also contains articles by leading bee men of the State, and is illustrated by many full-page cuts of different apiaries of New York's most progressing beekeepers.

◆

Deaf and Blind Enjoy Bee Lecture.—Our good friend Mr. J. C. Frohliger, of California, who has had long experience with bees, and who delivers lectures on beekeeping with the aid of 100 lantern slides and an observation hive full of bees, recently had the pleasure of addressing an assembly of deaf and blind. The address was interpreted by the assistant principal of the State institution, and proved very interesting to all the children assembled.

According to a schedule gotten out by the Board of Education of the Oakland schools, Mr. Frohliger is to appear on their lecture platform during the latter part of October. All lectures, of course, are free to pupils on account of their educational value.

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New Editor for Western Honey Bee.—The Western Honey Bee for October announces that beginning with the November issue Mr. J. D. Bixby, of Covina, Calif., will assume the editorship instead of Mr. Emerson. Mr. Emerson felt that he had to give up the position on account of locating on a large ranch in another part of the State.

We wish every success to the new editor with the California journal. Correspondence should be addressed to him at Covina, Calif.

◆

Frank F. France Marries.—The editor is in receipt of the announcement of the marriage of Mr. Frank F. France to Miss Caroline Mary Tremelling, which occurred at Platteville, Wis., on Oct. 2. The best wishes of the Bee Journal go with the young couple.

◆

Education is What We Want.—In looking over the University of California Journal of Agriculture, put out by the students of that institution, we were pleased to find in it an article on beekeeping by one of the students. Our pleased expression, however, turned to a frown before the article was half read; as a great many of the statements hardly agreed with our conception of what up-to-date education on these lines should be. The writer confused absolutely the two foul brood diseases. He claimed that in extracted-honey production swarming was prevented because the queen layed all through the supers. He stated that 150 colonies of bees consume a barrel of water every day, etc.

Education is all right, but better none than such as the above.

◆

"Bee King" Found Guilty.—The following was received from Mr. R. M. Guthrie, of Reno, Nev., will explain itself. "Below is a clipping in regard to Mr. C. I. Graham, whom we wish to advertise throughout the country so that he cannot ship any more bees without being recognized. In 1910, he shipped European foul brood in here, and nearly cleaned us out. He shipped in 300 colonies last year, and there were 59 left this spring. He has had honey and diseased combs exposed all summer:"

"Following a conviction before a jury in Judge Davis' court yesterday, C. I. Graham, known as the 'Bee King,' will hear judgment today. He was found guilty of exposing diseased brood combs to the injury of the bees of this valley.

"R. M. Guthrie, bee inspector, instituted the action against Mr. Graham, and went on the stand to testify. He told the jury that the defendant had exposed diseased combs, thus endangering the bees of the entire valley to infection. He said that Graham had been warned against the practice several times, and related that other actions had been brought against him for the offense.

"H. F. Hagen and H. Trickey, both bee men, also took the stand supporting Inspector Guthrie in the testimony. The defendant took the stand in his own defense.

"The defendant is to be tried on a similar charge Thursday, the accusation being that he committed the same offense at a different place."

◆

"Delicious Honey Crisps" Contained Practically No Honey.—The Standard Flaked Food Co., of Owosso, Mich., has been fined $50 for the alleged shipment into Indiana of so-called "Honey Crisps Corn Flakes," which was misbranded, according to a notice of judgment just issued by the Department of Agriculture.

The label on the package described it as "Delicious Honey Crisps; a Toasted Corn Flake Dainty—Guaranteed by the Standard Pure Food Co., under the Food and Drugs Act of June 30, 1906, guaranty filed with Secretary of Agriculture under Serial No. 5165."

This label was considered deceptive, and misbranding was charged because it conveyed the idea that the product contained a substantial amount of honey, whereas analysis showed it to contain practically no honey.

◆

A Tennessee Honey-Plant.—One of our subscribers sent us recently the blossoms of a honey-plant with the request that we give the name. The flower was sent to Mr. John H. Lovell, of Maine, an authority on plants. His answer is as follows: "The name of the species is Verbesina occidentalis (L.) Walt—small yellow crownbeard. It occurs on dry hills from Tennessee southward to Georgia and Florida."

In sending in plants we would ask that our subscribers send not only the flower, but also leaves and fruit or seed if possible, so that the identification can be made more complete.

◆

Another Texas Bee Bulletin.—Bulletin No. 158, of the Texas Agricultural Experiment Station, has as its subject "Investigations Pertaining to Texas Beekeeping." The book is written by three Texas men, Wilmon Newell, F. B. Paddock and William Harper Dean.

Wilmon Newell, State Entomologist, conducted experiments on "Artificial Division and Swarm Control." The experiments cover the year 1911.

Several colonies were artificially divided, the queen and five frames of brood and bees being put on a new stand, the parent colony being left on the old stand with queen-cells. The crop harvested by both the parent and divide, as well as by colonies which had been left undivided, was carefully weighed. The average amount procured from parent and increase was 114 pounds of extracted honey, while that produced from those not divided averaged 127 pounds, showing a gain in favor of those not divided. There was, however, the value of an extra swarm to be counted in, which would make the results, if anything, in favor of the divided colony.

Mr. Newell also experimented with swarm control. Part of the colonies were controlled by giving increased room, while the balance were controlled by "shook swarming." The former retarded swarming, the latter prevented it almost entirely.

Mr. Paddock has an excellent paper on the "Life History of Bee Moth and Wax Worm." He finds that sulphur fumes kill the grown moth but not the eggs, and very few larvæ succumb. Carbon-bisulphide, on the other hand, kills everything but the egg, so that where combs are exposed a whole season to the moth, they should be treated more than once with the carbon-bisulphide fumes.

"Statistical Study of Beekeeping in Texas," is the subject Mr. Dean takes up. Twenty-eight hundred beekeepers keep in touch with the department. They own a total of 90,000 colonies of bees valued at $434,000. The total production of honey of these beekeepers in 1911 was 2,400,000 pounds. Of this over one and one-half million was bulk honey, and nearly all the balance extracted. The value of wax for 1911 was $8000. Seven hundred and five beekeepers in Texas claim beekeeping as their profession.

The greater bulk of Texas honey is consumed within the State.

A copy of this bulletin may be obtained by Texas beekeepers by applying to the department at College Station, Tex.

◆

Mr. S. McCrea and His Northern Idaho Potatoes.

Go West Young Man, Go West.—Most of our readers will recall the short editorial in the October number in which the editor described some of the large potato vines he had seen while in Europe. Not to be outdone, Mr. George W. York, former editor of the American Bee Journal, wrote as follows about potatoes which grow in the West and grow and grow and grow:

SOME TALL POTATO VINES.

On page 329, I notice that our good Editor found some long potato vines away over in Europe. I am enclosing a picture of a resident of Sandpoint, Idaho, who had some long potato vines this year, and without irrigation, too. He got a few potatoes, also. On his patch back of the house, 16 by 26 feet in area, he secured 350 pounds of potatoes, or at the rate of 600 bushels to the acre. And some of the vines were over 6½ feet long. Mr. S. McCrea, the grower of these potatoes, is 5 feet and 9 inches in height, so the vines were easily the length I mention. The potatoes he calls the "Early Sunrise." This is a part of Idaho that does not need irrigation. George W. York.

◆

News Item from Minnesota.—The Minnesota Legislature, at its last session, appropriated a certain sum of money for the purpose of "establishing a department of apiculture" in our university. In fulfillment of the requirements of this act, A. F. Wood, Dean of the Agricultural Department, has recently appointed Francis Jager to the chair of apiculture. As nothing practical has ever been done with bees at our Agricultural College, the apiarist will have to "build from the ground up," and for the first year or two this will involve a vast amount of labor and effort. However, Prof. Jager is a thoroughly practical beekeeper as well as an all-around scientist and lover of nature.

Minnesota offers a wonderful field for beekeeping on an extensive scale. We have never had an entire crop failure in the State. Basswood abounds in three-fourths of its area, and with the increase in dairying, white clover is traveling north at a rapid rate.

Now that we have a definite center for the beekeeping industry in our university, where practical and scientific methods will be taught to any one wishing to take up beekeeping, the department invites the co-operation of all beekeepers in building up this great industry in our State. Beekeepers should make it a point to visit the apiarist at the State farm whenever they are in the "Twin Cities," and the office will always be open to correspondence.

Minnesota is going to be heard from in the next few years as a honey-producing State, and information in regard to it can be had by writing to Prof. Francis Jager, St. Anthony Park, Minn. L. D. Leonard, M. D.
Minneapolis, Minn.

◆

Eastern Illinois Convention. — The next meeting of the Eastern Illinois Beekeepers' Association will be held at St. Anne, Ill., on Dec. 8 and 9. The recent good crop of honey has resulted in a desire on the part of many beekeepers to attend the convention. Bring along your questions and have them answered. Mr. Sorenson, Mr. Sherrill, Mr. Roberts and Mr. Timmon, besides the State Bee Inspector, will be with us. We are making efforts to get the editor of the American Bee Journal to attend also.

H. S. Duby, *Sec.*
T. G. Willis, *Pres.*

Jacob Huffman Passes Away

On Oct. 3, 1913, at Monroe, Wis., occurred the death of Jacob Huffman, one of the leading beekeepers of the State of Wisconsin, as well as one of the most progressive.

The Late Jacob Huffman.

Mr. Huffman had always been a man of good health, but early in July he suffered a slight sunstroke while working with his bees on his farm near Monroe. He never fully recovered. He entered a hospital two weeks before his death, and shortly afterward was stricken with paralysis.

Jacob Huffman had been president of the Wisconsin State Association four years, and president of the Chicago - Northwestern Association for two years. He was also the choice of his association as delegate to the National Association in both 1911 and 1912.

Little known as a writer, he was recognized as a thorough beekeeper by all who heard him in lectures and discussions at the conventions.

Wisconsin was his native State. He was born only a few miles from Monroe, to which town he removed in 1901. A carpenter by trade, he was a beekeeper by profession, depending upon this alone as a means of support.

He was operating 300 colonies of bees at the time of his death, and had harvested a crop of 30,000 pounds of honey during the season just ended. His death will be a loss to his associate beekeepers as well as his family. Mr. Huffman was 66 years old at the time of his death.

BEE-KEEPING FOR WOMEN

Conducted by Miss Emma M. Wilson, Marengo, Ill.

Southern Face Bleach

Here is a good bleach which will whiten the skin and help to keep it in good condition:

Pure honey, 2 ounces; almond meal, 4 ounces; bicarbonate of soda, ½ ounce; almond oil, 1 ounce; alcohol, 1 ounce; boracic acid, ¼ ounce.

After this paste has remained on the face for several hours, wipe it off with olive oil, then bathe the face in warm water and pure soap. Two or three applications will whiten the skin beautifully.

◆

Introducing Queens

"I had 5 colonies of mixed bees that I wished to requeen, also one good Italian colony that had lost its queen. I ordered six untested queens and introduced them according to directions. Two days afterward, when I looked in the hives, two of the queens had been released and killed. The next day I found that the queens in the other four hives had been released and were being 'balled' so badly they were almost dead. I put each one back in her cage and introduced her as before, putting candy in the entrance. Then I looked at them not long afterwards, and all four were dead.

"What must I do? I am feeding the bees a good quantity of sugar syrup, and some of the colonies have a good deal of honey. I had carefully removed the old queens, and none of the colonies had any queen-cells, so I am at a loss to know what could have caused them to be so hostile to the new queens.

"It would seem very risky to buy six more queens and introduce as I did when the outcome would very probably be the same. I am a 'woman beekeeper,' and very much discouraged. I bought my bees in the spring, and have worked faithfully with them. Can you help me with some of your good suggestions through the American Bee Journal?"

Mt. Sterling, Ky., Sept. 28.

One of the things in beekeeping that seems to go a good deal by luck and chance is the matter of introducing queens. It is just possible that you might try introducing another six queens in exactly the same way, and make an entire success at it. Very many ways of introducing queens have been advanced, each one a "sure thing," only to be found more or less uncertain in the hands of others. Of course, there must be reasons for success or failure, and if we only knew all about those reasons we could make queen introduction a matter of certainty instead of a matter of chance. Unfortunately we don't know all about them, and so must work a good deal in the dark.

There are, however, some things that should be understood by any beekeeper who has to do with introducing queens; and introducing queens is one of the things that every bee-keeper should have to do with who expects to be well toward the front rank. It may be well to recite some of those things that we know—or suppose we know.

J. M. Butler, of Rupert, Idaho, Examining His Bees.

The queen in the colony open was named Yellow Rose of Texas, on account of her prolificness and beauty.

Young bees receive a new queen more kindly than old ones; it seems to be the field bees that object to the new comer. A strange bee will be more kindly received when bees are gathering freely. In the midst of a heavy flow a queenless colony will sometimes receive a new queen kindly if she is merely dropped without any ceremony among the bees on the middle of a frame of brood. One of the most important things in the estimation of most beekeepers, is that the new queen shall acquire the "hive odor" of the colony to which she is introduced by being imprisoned for a certain length of time in the hive. Whether this theory of "hive odor" be correct or not, it is true that a queen will generally be killed if the bees are able to get at her as soon as she is put in the hive, and just as sure to be received if imprisoned safely for several days.

A colony should be conscious of its queenlessness before it is ready to receive another queen—at least that is the general opinion—and if queen-cells are started it is well enough to have

As the old lady said in passing the candies, "Take a lot, take two—handfuls."

them out of the way. It is not best to have a colony queenless too long—possibly two days being better than two weeks, although the new queen may be in the hive before the old one is removed, provided the bees cannot get at her to harm her until after the old queen is gone.

With these principles in mind—which are put forward with none too much confidence as to their completeness or correctness—we are ready to consider actual practice. You do not say what instruction accompanied the queens, but a common way is to instruct that the old queen be removed and the cage with the new queen be placed between the frames or on the top-bar, allowing the bees to eat out the candy, thus liberating the queen. That might mean that the queen would be out in a day, two days, or longer, depending somewhat upon the condition of the candy, the softer the candy the sooner the release. If no honey were coming in, feeding would ensure greater safety. It is possible that failure would have been avoided if the queen had been longer in the hive before being released. You could make sure that the queen would not be released for 3 or 4 days or longer. Tack on a piece of tin, or in some other way prevent the bees from getting at the candy. Then, after the cage has been in the hive 2, 3, or 4 days, remove the tin and let the bees free the queen. That would make introduction safer, as the queen would have more time to acquire the hive odor.

Indeed, many queens have been introduced in that way with rarely a failure in this locality. The queen was merely left fast for 3 days in the cage between the combs (in the height of the harvest the cage was stuck into the entrance), and then the bees were allowed access to the candy. A few days after time for the queen to be out of the cage—perhaps a week after, but before time for young queens to hatch from queen-cells started on the brood—examination was made to see if the queen was laying. Often queen-cells would be found at this time, which were destroyed. Possibly the bees might have destroyed them on their own account, but no chances were taken. Sometimes it happens that the queen does not lay until she is out of the cage a week or so, and then does good work; but in most cases when she is so long about it she turns up missing a few days later.

There is a way of introducing a queen that is entirely safe and certain. Take combs containing brood that is mostly or entirely sealed. (If the combs be put over a queen excluder above a strong colony for 8 days, all the brood will be sealed.) Put 3 or more such combs into an empty hive, being sure to brush from them every bee. Put in the queen, and close the hive absolutely bee tight. Put the hive where it will not be cooler than about 80 degrees. This may be in the house, but perhaps a better way is to set the hive over a strong colony, with wire-cloth between the two stories, so that the heat may come up from below without letting any bees up.

After 5 or 6 days the hive may be put on a stand where it is to remain, and to avoid robbing let the entrance be so small for a few days that only one bee at a time can get out or in. Then the colony can be gradually built up by the addition of sealed brood from time to time. Although entirely safe, this plan is too troublesome to be used with any except a very valuable queen.

Another way that is not quite so safe is very much less trouble. It is to use the plan generally given in the instructions that come with the caged queen, only to get all the older or field bees out of the hive, remembering that these older bees are the ones that make trouble. How will you get all the field bees out of the hive? Very simply. Let A be the hive that contains the colony that is to receive the queen. Take a frame of brood from A, or from some other hive, and put it in a hive we call B. It doesn't matter much what is done with the empty space in B, but it may be well to put the frame of brood at one side of the hive, putting 2 or 3 empty frames next to it, without even a starter in them, the rest of the hive being empty. Take A from its stand and set B in its place. If supers were on A, put them now on B, and put the cover over all. On top of this set A with its bottom-board, so there will be no communication between the two hives, and put the caged queen in A.

Now what will happen? The field bees will leave A for the fields just as if no change had been made, and when they come back they will enter the same *place* they have always entered, only they will enter a different *hive*, for they will now enter B, leaving A without any field bees. After the queen has started laying nicely in A, perhaps 4 to 6 days after the hive was put up, A may again be put back in its old place. The queen being now surrounded by a strong force of friendly bees will not likely be disturbed by the returning field bees.

FAR WESTERN BEE-KEEPING

Conducted by WESLEY FOSTER. Boulder, Colo.

A Visit to M. W. Harvey

Early in August I visited one of the apiaries of Mr. M. W. Harvey, of Montrose. He was at work, and his automobile stood beside the honey house covered with a canvas. This is characteristic of Mr. Harvey. Everything he has is well cared for. The apiary contains about 190 colonies, and is a model of neatness. One trouble Mr. Harvey was having along with nearly all the other Colorado bee men during August, the bees were swarming, and nothing would retard them seemingly. Mr. Harvey said that seven out of every ten colonies were preparing to swarm. But he was pretty well prepared for the emergency, for he had a number of extra hives, full depth, and nearly full of honey. When he came to a hive that had queen cells well along, so that there was little chance that they would give up swarming, he would shake the swarm, or a good proportion of them, into one of these extra hives of honey, and put the supers from the old colony on top. The bees would have to move a lot of that honey upstairs into the comb-honey supers to give the queen room to lay, and the way they finished up the honey was a sight to see. I know, for I tried a number of them myself. I hived the swarms, however, back on the old stand into the extra hives, and put the supers on top.

The old colony Mr. Harvey would move away and cut out the queen cells. When he shook the swarm he would run the queen in at the entrance. The photograph given shows Mr. Harvey looking for the queen.

Partial View of M W. Harvey's Apiary in Montrose Co., Colo.

The Honey Market

The buyers of western comb honey have been fearful for several weeks lest the crop of comb honey should be larger than reported. Each buyer has delayed buying for fear he might pay more than the market would be a little later. This is right so far as each individual buyer's interest is concerned—every man must protect himself. However, this principal has worked an injury to the honey market this year, for the comb honey crop in parts of the West has been larger than usual, and the buyers have bought less than usual.

Some buyers bought honey in Idaho early at $3.00 a case for comb honey, which is considerable more than $3.00 a case at Colorado common points, freight taken into consideration. Some of them are sorry that they paid so much. for they can buy for less now (Oct. 7).

Several cars of comb honey were shipped out at $3.00 and a little better, for No. 1, from Colorado. Then the price dropped 15 cents a case, then it went to $2.75, and some honey has been sold at $2.50 a case for No. 1, I believe. And this has happened with no appreciable shading in price upon the main honey markets.

Several weeks ago one market reported two cars of western comb honey having arrived and the price had dropped. Two cars of honey on such a market should not appreciably affect that market.

A letter from a beekeeper who sells in this same market, informs me that he never saw it so bare of comb honey at this time of year. He told me that if he were in my place he would hold comb honey until a little later.

This holding off in buying comb honey when the markets need it is very injurious to the comb-honey business. The producers and dealers should be able to get together better, but both seem to distrust the other, and as a consequence we are likely to see large quantities of granulated comb honey on the markets next spring and early summer. And this all because of faulty methods of distribution. The crop is not enough larger than in normal years to cause any serious trouble. However, there are small districts where the production is twice as heavy, and the producers get frightened and cut prices, and the buyers get frightened and refuse to buy.

Disposing of Wet Extracting Combs

It is poor policy to put out wet extracting combs for bees to clean up. In the first place it is likely to induce robbing, and in the second place it is an easy way to spread foul brood if there is any in the community. But if we have American foul brood little extracted should be produced anyway. How are we to get these combs cleaned up in the fall? By using care it can be done. Carry out a few supers full of the combs in the evening, first contracting the entrances of those colonies selected to do this cleaning. Only those that are strong should be entrusted with this work.

Place the supers on top and be certain no bee can gain entrance through any crack or hole. Any honey daubed on the outside of the extracting supers should be carefully washed off. By

M. W. Harvey Looking for a Queen.

the next morning a strong colony will have cleaned up a lot of the combs, and if the work is not all completed the bees will be so prepared that they can repel any onslaught of robber bees. November is too late for this cleaning up work except in some of our near southern States.

Here in Colorado we quite often have weather in November when such work can be done, but September and October should see most of the extracting work out of the way.

SOUTHERN BEEDOM~

Conducted by Louis H. Scholl, New Braunfels, Tex.

Texas Honey Crop Conditions and Marketing

The great Lone Star State has had an unusual year. The spring prospects were very promising, and beekeepers everywhere were jubilant. A little later, weather conditions turned anything but favorable for the best welfare of the bees, and as a consequence the colonies were in a weaker condition by the end of April than four or five weeks previous. The long drawn-out cold spring weather not only effected the bees but the honey yielding and pollen bearing vegetation as well. For this reason the early spring honey crops were a failure except in a few localities where light crops were obtained. Generally speaking, however, there was no Texas spring honey crop this year.

SUMMER CROP WITH A RUSH.

The early summer crops came at about the same time in most of the southwest Texas localities, resulting in a rush of honey to market a little later in the summer that caused a slump in the market. This is a thing that we have not experinced as long as I can remember. There was no spring crop to fill a demand that existed, and the early summer crop brought good prices. But when the later summer crops came with a rush everybody wanted to sell, and, as a consequence, it appeared that the country was flooded with honey. This was felt not only by the buyers but the beekeepers as well.

CUTTING PRICES HARMFUL.

The result was that some of the anxious beekeepers cut prices in order to get their honey off their hands. Other beekeepers were compelled to sell their honey in order to pay debts, while still others feared granulation of their product before being able to dispose of it. This was bad for the better beekeepers who held their honey and desired to maintain a consistent market price. The buyers became aware of the fact that some beekeepers were making a lower price and took advantage of it. Whenever honey is offered anywhere in the market at a low price, it has a tendency to establish a lower price for the entire honey market.

BUYERS FEAR BUYING.

Under these conditions the buyers fear placing their contracts for honey, because they fear that others may buy at a lower figure. Such deals might mean a big loss. Consequently they prefer not to have anything to do with honey. At a staple price these large wholesale dealers are in splendid position to distribute large quantities of honey. They have their own traveling men who cover the territory well, and this enables them to sell to a great number of retail dealers over the country. Of course, they must figure on just so much profit over the price paid the beekeepers or they cannot afford to handle it.

A great deal of honey was sold early in the summer at a very fair price. But for the above reasons this fair price would have continued, I believe, and there would have been a much more steady sale of honey throughout the later summer months and in the fall. There is no reason why there should have been a slump in the Texas honey market this year, and very little reason why the price should have come down on an average of 1 to 1½ cents per pound. The quantity produced did not warrant it.

MANY SMALL BEEKEEPERS UNFAIR.

The worst evil in the honey market seems to be the small beekeeper who insists on selling his honey direct to retailers at exactly the same price, if not a lower one, than that being paid by the wholesale buyers. The price to the retail trade should be correspondingly higher than the wholesale price, if the beekeeper wishes to sell some of his honey direct to the retailers. Very few do this. Our own experience in selling much honey direct is that many beekeepers quote a lower price to our own customers very often, and the result is that we are asked to meet that lower price. The same occurs with the large dealers. It is difficult for these to meet a lower price when they have paid this same price for the honey they are offering.

SHOULD SELL TO LARGE DEALERS.

All small producers, all those who are not in a position to sell large quantities of honey direct to the retail trade at the prevailing price, should sell their honey to the large buyers who ARE in position to sell it properly. I know of a great many beekeepers who seem to be anxious to sell direct to retailers, and thus work up a market of their own. This is all right and good provided certain rules regarding the proper price, etc., are not overlooked. But most of these beekeepers sell at exactly the same price that is being paid by the large buyers who sell again, and thus they come in direct competition. Also many such beekeepers sell what honey they can at this low price, then try to sell the rest to the large dealers. They are nearly always dissatisfied at the price offered.

EDUCATION IS NECESSARY.

A great deal of good would come of properly educating the beekeepers to market their honey. There are many excellent beekeepers who know how to manage their bees to make big crops of honey, but who do not know how to dispose of the crop after it is harvested. Many beekeepers are not "cut out" for selling profitably what they are able to produce. They ought to sell to the large buyers who sell again rather than try their own hands at selling direct and run the risk of making a botch of it, not only to their own detriment, but to that of all the beekeepers of the section. It is an easy matter to bring down the price of the market by carelessly selling honey at too low a price.

BEEKEEPERS' INSTITUTES.

I know of no better way to reach beekeepers, especially those beekeepers located on our farms and "in the neck of the woods," than by holding institutes in every community where several beekeepers are located. "Farmers' institutes" are held everywhere in the country. They are very popular and do much good. Beekeepers' institutes could be made just as profitable, and would mean much for the betterment of beekeeping. The advantage of such institutes is that they can be held wherever a small number of beekeepers can be brought together. After being organized, frequent meetings should be held, especially during those seasons of the year when the discussions will do the most good. Good programs and interesting speakers make these valuable.

CANADIAN BEEDOM~

Conducted by J. L. BYER, Mt. Joy, Ontario.

Drouth Affects Beekeeping

At this date (Oct. 13) we are still having a prolonged drouth in this part of Ontario. Much winter wheat, sown in September, is still dormant in the ground, and fall plowing is held back. How much this drouth will affect beekeeping interests is hard to say. At best there will be a light stand of clover for next season, and such a condition does not help it any. Any alsike that weathered the extreme conditions of midsummer, appears to be looking fairly well, but, as intimated, alsike fields in our locality for next season are like hen's teeth, few and far between.

Shall We Investigate?

I read Prof. Bigelow's article, on page 348, with much surprise. Indeed, if the Professor was not so well known as a writer, I would have passed his ideas along without any comment, believing that the thoughts suggested were from a beginner, and that the author would soon find out that it is a rare thing for more than one queen to issue with a *prime swarm*.

As to his question, "Tell me why those drones go out with the cluster if only the old mated queen leaves the colony." I would ask him in turn to tell me why everything in the hive that is able to *walk*, let alone fly, will rush out in force while under the magic spell of the "swarming fever."

Sometimes in cases of supersedure of the old queen, a young queen—perhaps more than one—will come out with the old one at swarming time. Sometimes when strong colonies are held back with bad weather after starting queen cells, young queens will emerge with the first swarm along with the old queen.

Prof. Bigelow says he will not be convinced that he is wrong until we prove by careful examination of every cluster. He even wishes us to sift the bees through queen-excluders to make the matter positive that there is only one queen. I only wish some other questions, not so clear to my mind, were as easily settled.

North or South—Which?

Sometimes, in common with other mortals, the writer thinks that there are other countries more favored, climatically, than his own. These views are, of course, only "periodical," for at nearly all times I would say and *believe* there is no better place on earth to live than Ontario. Of late I have been thinking along these lines more than ever. Our country is as good as any for beekeeping when *all* things are considered. There may be places where more surplus is produced, but in most of those places prices are not as good as they are here. Then, again, in many of these "paradises" there is more work, as warm weather makes it a continual fight with moths, etc., which bother little in the North.

Too Much Rosiness

In the Ontario Agricultural College Review, a journal published by the students of the Ontario Agricultural College, there appears in the October number a splendidly written article by Miss Scott, entitled, "The Golden Honey Bee." While I know the writer personally, and feel that she is writing sincerely and correctly according to her experience, yet I cannot help making a mild protest. In my estimation, her picture of beekeeping is altogether too rosy, as it is apt to lead people to go into the business as a "get rich quick" proposition. One sentence strikes me forcibly, "Why so much need be said in favor of beekeeping in order to 'boost' it, is a mystery." I may be pardoned for asking why so much "boosting" is being done—who is demanding it?

Is the "boosting" being done by those already in the business? Is such boosting in the interests of the honey-producers in general. Miss Scott says: "Taken from a financial standpoint it is far ahead of—well, everything." Pretty broad statement, and apt to mislead some who have visions of becoming millionaires. "In one season we can buy our bees and outfit and make enough from them to pay all expenses and have twice as many bees with which to begin the following year." By "expenses," she means paying for all bees, etc., as this is made very clear in a sentence further on in the article. I have no idea of questioning that Miss Scott has been able to do this during the past few years in a favored locality, and with good crops three years or more in succession, but is that estimate a fair one, taking the country in general? It certainly is not for our section, nor for the greater part of Ontario. In most years, if we made the increase intimated, the surplus would be easily cared for. If instead of "one year" the term "some years" were used, I might not object to the claim, as this year the claims made would be substantiated in many parts of southern Ontario. But even this year we have some 300 colonies 100 miles north which have barely paid expenses. How would her rosy view measure up with a crop of that kind?

I fear that some who do not know me well, will think I am selfish, but I assure you that I am an "easy mark," as many can testify. I am always ready to give encouragement to any one when it comes to bee-keeping, but I *do object* to things being painted too rosy, for it will do no good to the industry. It will lead beginners to invest only to be disappointed.

A few days ago I received a private letter from a good friend "over the line," a beekeeper known all over the country. I had never mentioned the subject under discussion to him. What he says is from the viewpoint of an outsider, and therefore independent and unbiased. I cannot refrain from quoting from his letter. After referring to what I had to say recently in Gleanings in Bee Culture about 300 members being added to the list of the Ontario Beekeepers' Association during last year, he says: "How many of the 300 would have been in the business if certain people had not been so solicitous in inducing them to engage in honey production? Don't misunderstand me; I am not opposed to anybody engaging in the bee-business if they come in of their own volition, but to have some one shouting at the top of their voices, 'Come on boys, there is another barrel of molasses busted; all get shingles,' doesn't appeal to my sense of fair play."

Work in the Apiary Practically Ends in October

After Sept. 15, our combs are safe from moth, and they can be piled up inside and left until next June, as with hard freezing weather even the eggs layed in the combs will be killed. The work of the beekeeper in the North practically ends in October, and nothing to speak of is done until the following May. While I often long for the hum of the bees during the winter months, the chances are I would not appreciate their humming as much as I do in the spring, if I heard them all the time. It is a fact that change brings enjoyment, and if it were always warm we would not appreciate the balmy spring days as we do.

Judging from reports, bees in the North actually consume less stores than in the South, where there is no loss from cold weather. I imagine I hear some fellow down South saying, "A case of sour grapes," and perhaps in less than three months I may long to be on some plantation away from the chilling winds of our winter.

Feeding

Have you finished all necessary feeding yet? The work should be all done before this appears in print, but if you have delayed the matter this long, feed at once, as every day makes the results more uncertain. For late feeding, an inverted friction-top pail, with several holes in the lid, is the very best feeder. Many bee-keepers are now using it altogether, regardless to season. The cans are easily obtained, easy to prepare, and bees will take warm syrup from them, even if the weather is cold, as the pail comes in direct contact with the bees, and it is easy to make all snug around it.

Chain-driven, Two-cylinder Reo Automobile of Wesley Foster.
100 empty supers or 24 colonies of bees may be hauled. Convertible pleasure and utility car

BEE-KEEPING IN DIXIE

Conducted by J. J. Wilder, Cordele, Ga.

Did I Pass On Them Properly?

Not long since I was called on to answer a question asked by three different interested people from different parts of the country. A young man asked me in person if he could make $20,000 keeping bees. I told him he could if he would make it a strictly business proposition like successful business men in other lines.

One wrote me and asked if he could make a $50,000 salary from the returns of bees. I wrote him that he could, if he were naturally gifted that way, and would perform his task as well as his bees under good and skillful management.

Yet another wrote and asked me if his son could make $100 000 at beekeeping. I answered that his son could if he was a well-rounded business man with considerable experience, and capital enough to start the business well. His talent should lie along this particular line of business. It should be his "hobby." He would have to see to it that the financial end of the business was well taken care of, and an economical course pursued. Even then his goal could not be attained early in life.

I may have been too optimistic with the last party, but I know that such a thing is possible. The impossible is beyond.

Information About Winter Stores

"Mr. Wilder:—I am a novice in beekeeping, and want to know how much stores to leave my bees. I have 10-frame hives, and some of the colonies have filled the supers well while others have not, but all are strong in bees. Should I leave any supers on the hives during winter? When would it be a good time to requeen? I bought my bees in box-hives from the surrounding country, and spent my leisure time transferring during the summer.

"I find some of my colonies have brood in all the super frames. What should I do? All my hives are well filled in lower story; combs all built and filled with brood, honey and pollen. (Mrs.) B. W. Marston.

"Ninock, Bossier Parish, La."

Your bees being in 10-frame hives should have plenty of honey in the lower stories for winter and spring. Two or three frames well filled, or several partly filled with an equivalent amount are sufficient. I would extract the honey from the top stories, and set the super of empty combs back on the hives and leave them on over winter. The bees will take care of them. If you were to remove the supers, the bee moth might damage or destroy the combs. Early next spring will be the best time to requeen, as it is getting late for this now.

I would leave all super frames containing brood on the hives, and not extract the honey from them until the bees have hatched. Instead of extracting these later you might reserve the supers for spring feeding.

Back to Florida

November 1 we will start for our winter home at Bradentown, Fla., where we expect to take a rest after a busy season. The past one has been our greatest, and in order to make the next one exceed it, we deem it best to prepare ourselves for the task.

If any readers of the American Bee Journal, or other beekeepers, are coming to Florida, we would be glad to have them call on us. A large number of beekeepers wintered here last year, and we had many interesting conventions. A greater number is expected this winter. What a good time we will have fishing, hunting, and taking other pleasurs which beekeepers enjoy. There will also be the exchange of ideas along business lines. Come as many of you as can, and let's have a good time together. It will be a treat you justly owe yourself.

52 Colonies of Bees Being Moved by Auto 12 Miles.
Front car, Wesley's Foster's Reo; rear car, W B Walcher's Reo truck.

CONTRIBUTED ARTICLES~

No. 1 to Fancy Sections all the Time

BY DR. A. F. BONNEY.

IN the summer of 1913, the writer conceived the idea of making small 1½x2 pound sections, and larger for the use of hotels and dining cars, having, I think, found a way to produce them as rapidly as the larger sizes, but did not get to work in time to develop the work. I thought there was a demand for this kind of honey, but the editor of Gleanings in Bee Culture expresses the opinion that there is no call for such size sections, notwithstanding that there was in their magazine something about it some years ago.

Considering the Medina people pretty good authority on things pertaining to honey, I feel inclined to drop the small section idea, while in it I find something that may be of vastly more value to beekeepers, and that is to have the bees make No. 1 to fancy honey all the time, and more of it than of the ordinary mixed kinds. Old and old-time beekeepers are requested not to laugh too loudly at this, for if Mrs. Bonney msy be believed, I sometimes show aigns of almost human intelligence. You will remember that Mr. Langstroth's hive was laughed at, the Porter bee-escape was considered a crazy notion, and possibly we still have something to learn about the bees and what we can do with them.

I suppose every one who has produced section honey has tried "feeding back," which, I am assured, is a waste of honey. The use of frames of combs helps but little to get the bees up into the sections, and any falling off in the flow shows at once in unfinished sections. The bees will produce more honey in extracting frames than in sections, if beekeepers may be believed, all of which was of influence in the formation of this idea.

As I said in a previous article, I formerly wanted to patent every idea I got, but while I think I have something of great future value, I am going to give it to the beekeeping world to be developed.

Every one knows that if broken, patched, and other irregular comb be put into a hive of active bees they will at once patch it up until a week later no one can see the joints, so I shall take an extracting frame without wires, put in a full sheet of thin or extra thin foundation and let the bees fill it. When it is done and sealed, I shall take a stiff steel form and cut blocks of honey the exact size of the sections used, transfer them to sections, put those in a holder, put them into the hive, and nature will do the rest.

Like some other ideas which proved to be great, there is not much to this, if it proves to be what I think it is. That the bees will fasten the sections in place and produce more uniform results than in the old way I almost know; that the honey can be transferred at a profit I am convinced, for 15 to 30 seconds should suffice for each section. The transferring can be done in the cool of the evening; the frames can be put back to be refilled

I do not know just what loss there is from unfinished sections, but I do know that in my little business the percentage of unfinished pieces was appalling, to the extent that I quit producing section honey. Bees will work in extracting frames when they will not in sections, and the frames can be spaced so that the finished pieces will weigh a plump pound, and being all finished before being transferred it is probable that the bees will leave them so, but the man can leave a "pop hole" in one corner of the section if he wishes.

As to the method of work, I would suggest that those who wish to experiment in the spring, use unwired frames of any size, and let the bees finish, or nearly finish, some sheets of honey. Take out one, lay it down, and with a stiff metal form which will just slip into a section, stamp out a chunk of honey, and another until as many are cut as possible, then lift the frame and put it back in the super over, of course, a drip can. Now slip the section over the cut comb, and then slipping a knife blade under one edge stand the section on end and set it into the section-holder and transfer this to the hive.

Provision must, of course, be made to catch the drip from the cut combs, but anything, even four sections in a super of extracting frames, will tell you what can be done with the idea. The fact must be patent to beekeepers, that if the bees will produce 32 sections of honey in extracting frames sooner than they will in so many sections, and that if they can be transferred to the hive to be resealed, and without loss of time the increased money one will get from the improvement in grade will amply repay him for the work and bother. However, I do not wish to argue. I give the idea to the beekeepers, while positive that in the hands of careful persons it will prove a money maker.

I shall be very glad to hear from individual readers of the American Bee Journal about this, and in the coming season, if I am alive, I want to hear from every one who tries it.

Buck Grove, Iowa, Sept. 4.

The Signals of White Clover

BY JOHN H. LOVELL.

AVERAGE-SIZED heads of white clover contain from 57 to 85 flowers. (The numbers in four heads were respectively 57, 61, 68 and 85.) When a cluster begins to bloom all the flowers point upward as is shown in Fig. 1. After the marginal flowers have been pollinated and ceased to secret nectar it is of no advantage to them to receive visits from bees; and it is a waste of time on the part of the bees since they obtain no booty. How can this be prevented? Very simply, by bending the outer flowers downward as may be seen in Fig. 2. The reflexed flowers often turn reddish at first, but later fade to brown. The bees pass them by wholly unheeded, and confine their attention to the newly expanding blossoms. Finally all of the flowers bend downward, as is shown in Fig. 3. They no longer require the visits of insects. All that is left for them to do is to mature their seed, during which they turn to a dark brown color.

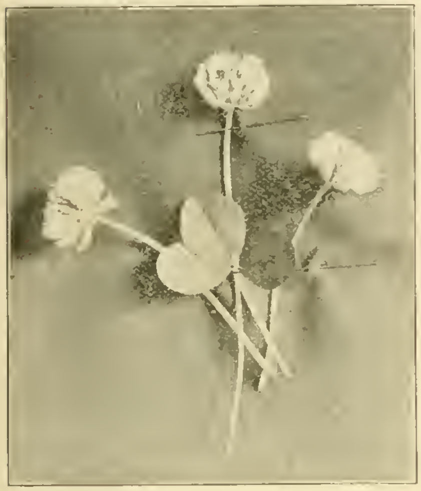

FIG. 1.—First stage of white clover heads. all the flowers point upward.

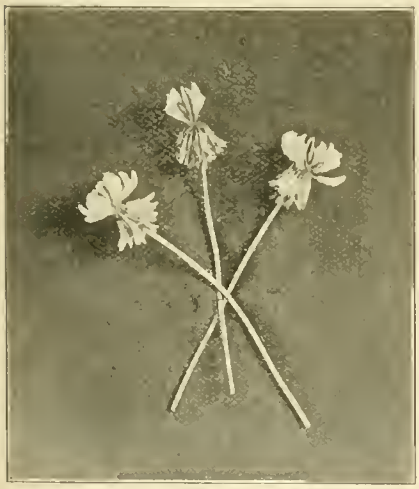

FIG. 2.—In medias res. Second stage of white clover heads; the older, marginal flowers point downward; the central, later flowers still point upward; the cluster has the form of an hour glass.

The flowers of alsike clover heads and of yellow clover heads behave in a similar manner. Figure 5 shows the three stages or phases in the flower-clusters of yellow clover. Another familiar plant in which the older flowers bend downward and change from blue purple to dark purple in color is the purple vetch (*Vicia cracca*), so common in worn-out fields. These changes of the flowers in position and color serve as signals or signs to bees, telling them which flowers to avoid and in which to seek nectar.

But no such change takes place in the flowers of red clover, which is pollinated by bumble-bees. There is no need of it. The floral head is much larger, and elongates so that there is a convenient landing place offered to the female and worker bumble-bees. After pollination, the flowers, beginning with those which are lowest, wither and turn dark brown.

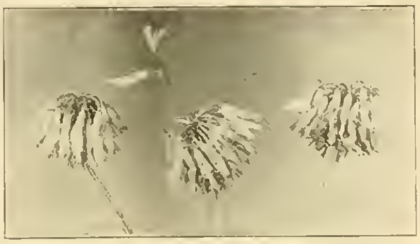

FIG. 3.—The end. Third stage of white clover heads; all the flowers (except one on the middle head) reflexed.

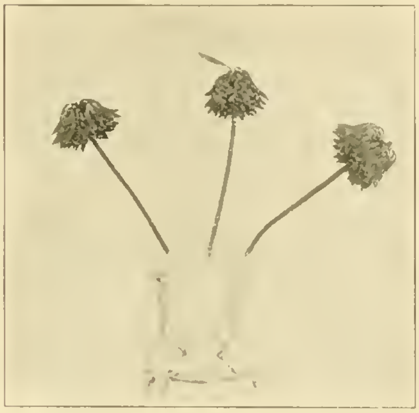

FIG. 4.—White clover flowers in third stage

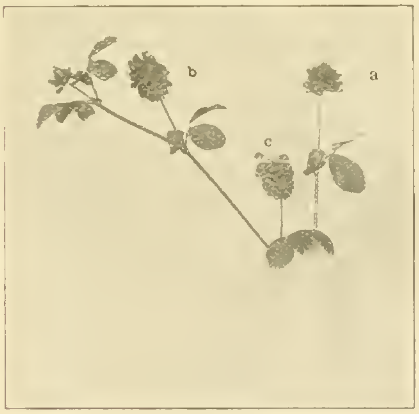

FIG. 5.—The three stages in yellow clover; *a*, flowers just beginning to bloom; *b*, flowers partly bent downward; *c*, all the flowers reflexed.

It is clear that it is an advantage to white clover to have flowers bend downward; and it would be interesting to know just how this habit has arisen. The fact that it is of universal occurrence in both white and alsike clover, would indicate not only that is beneficial but easily acquired. As the inner flowers grow they tend to push backward the marginal ones; and once these have assumed a horizontal position, gravity might pull them downward. If any reader can suggest a better theory I wish he would write to me about it.

Waldboro, Maine.

Bees in Southern Mexico

BY L. K. HIRSHBERG.

THE investment of American capital in Mexican enterprises, as well as the unsatisfactory state of the internal affairs of our southern neighbors, makes any discussion of commercial matters in that sanguinary republic most timely. The bee-breeding industry, for example, in Mexico, owned for the most part by citizens of the United States, has luckily been little disturbed by the guerrilla warfare.

The most important center for the breeding of bees, and therefore the production of both honey and wax, is in southern and western States. Here in the mountainous sections of Papantla, Jalacingo and Chicontepec, as well as the fertile environs of Vera Cruz, especially in the country of Sosanoloapas, there is an enormous bee-breeding business. Indeed, apiculture may justly be called one of the most profitable industries thereabouts.

Housing of bees is given little if any consideration. The honey-makers are maintained for the most part in hollow trees, excavated logs and discarded boxes. These methods have been handed down to the greasers from the primitive aztecs and Indians, who knew how to cultivate bees before the conquest of Mexico. There are a number of native wild bees here not found elsewhere. Only two of these varieties, however, have been domesticated.

Along with the light-colored and dark German bee, and the smaller Italian pure breeds, many hybrids are cultivated. The Spanish names of some of these are La Espanola, La Castellana, La Real, and Abeja Prieta.

One of the native rules for building hives is to build them upon platforms or stilts in any way to keep them above the moist earth. "Build," however, is a wrong word, for no one takes the trouble to do that. If hollow stumps or logs are used, you may find them hanging like a hornet's nest from the beam under the roof of a veranda, or from the limb of a tree near the house. When the fork of a tree is available, you may be sure it will be found with one of these improvised hives. Stilts, posts, or platforms are kept from 2 to 6 feet above the ground.

Honey is removed from the hives about twice a year. The preferred time is in the months of March and July, although there are no iron-clad rules. The amount of honey and wax collected is as inconstant as the seasons themselves; although the average may run something like 13 pounds annually to each hive, and the wax about 2 pounds.

As for flowers, no attention whatsoever is paid to them. The bees are allowed to select nectar in a haphazard fashion, although the keepers are well aware that certain flowers contain more honey than others. Curiously enough, honey that is gathered when the coffee trees are in bloom has an acrid, bitter coffee taste, while a certain vine which grows profusely in that neighborhood taints the honey, when it blossoms, with an onion odor.

The honey-comb is removed by Mexican beekeepers by means of machetes, long Spanish knives. The bees are usually smoked out by burning corncobs or by means of dry manure burned in clay or cheap metal stoves. The honey is separated from the combs in exactly the way it was done a hundred years ago. They compress the combs with their bare hands until no more honey exudes; then the whole mass is pressed in a coarse cloth made of some common fibre such as pitu. Very few of them use a hand press or sieve; only a very few use modern honey extractors.

There are large black ants called by the Mexicans "opehua," which are most destructive to bees. When these vicious insects make an onslaught upon a colony they may destroy it in one night. These ants, however, do not seem inclined to attack the wild honey, made by the wild Mexican bee, a small, stingless honey gatherer. This little stingless bee is no larger than the ordinary house fly, and its product is particularly prized for an alleged medicinal value. Although wild, this bee is easily domesticated, when gourds or small vessels are used for its hives.

Wax from this fly-like bee is black or very dark in color, and is often found in hollow trees, fissures in rocks, and holes in the ground, where the tiny creature makes its nest. Another wild Mexican bee called the "cuitla" is dark in color. When angry or disturbed, this bee spurts out a liquid said to cause an itchy eruption on the skin. This fluid is much sought by the superstitious natives, as well as medical charlatans, for the supposed cure of every ailment of the human flesh.

Baltimore, Md.

Swarming Facts and Fallacies

BY J. E. HAND.

THE thoughts expressed in the beginning of the next to the last paragraph of the article by Edward F. Bigelow, page 348, reminds me of the Irishman who said, "Faith, and I'm open to conviction, but, begorrah, I'd like to see the man who can convince me." While I may not succeed in convincing Mr. Bigelow of the error of his hypothetical conclusions, I can at least show my good will by making the attempt, for all my experience along this line leads me to believe that his hypothesis is at fault in more ways than one.

First, he is in error in assuming that the queen leads the swarm; in fact, the reverse would be nearer the truth. We practiced clipping queens exclusively, for several years, during which time we watched the issuing of hundreds of swarms, with all our senses alert to discover the clipped queen in order to cage her in time to prepare the hive for the returning swarm, and we never yet saw a queen *lead* a swarm out of the hive. Occasionally she will accompany the first rush of bees, but oftener will emerge when the swarm is about half out, and not unfrequently will be among the last to leave the hive. Again, his hypothesis is wrong, when it leads him to conclude that nature intentionally provides a plurality of queens for a prime swarm.

I have sifted hundreds of colonies of bees through queen excluding metal, searching for the queen to clip her, and never found a plurality of queens except in case of supersedure; in which case the failing queen and her daughter are frequently found on the same comb, and might also both accompany the prime swarm. Such queens, however, cut no figure, since they are tolerated on account of their weakness.

With this view of the case, I must conclude that instances where a plurality of queens accompanying a prime swarm are of rare occurrence, and can be accounted for in one of three ways. First, it might happen in case of supersedure, as just described. Secondly, swarming might be delayed by inclement weather until some of the young queens emerge, in which case there would undoubtedly be a plurality of queens with the prime swarm. This occurrence is rare, however, and is no part of nature's plan. This is proven by the fact that the bees exert every effort within their means to hold such queens in the cells, until after the issuing of the swarm.

Several cases of this kind have come under my observation; in one instance 5 queens emerged from their cells in one hive, in as many minutes after the issuing of a prime swarm, accompanied by a laying queen, and some of them bore evidence of having been held in leash within the cells, for a day or two. Another instance came to my notice where two unhatched queens were intimidated by the threatening attitude of the bees to the extent that, while the caps were removed from the cells, they did not emerge until several minutes after the issuing of the prime swarm. Judging from their appearance, and the lively manner in which they frisked about upon the combs, I would have taken them to be at least two days old, had I not seen them in the act of emerging from the cells; and I have also known the same thing to occur in after swarming. Thirdly, a virgin might be on her mating tour at the time, and might be attracted by the commotion of the swarm, and join it. In this case, there would be a plurality of queens in the prime swarm.

Again, it is not necessary to sift a swarm, having a clipped queen, in order to determine whether or not it contains a plurality of queens. The action of the swarm, in returning to the hive, after the clipped queen is caged, is a prima facie evidence of queenlessness. All my experience along this line will warrant me in making the positive assertion that some one of these three contingencies is responsible for every case of a plurality of queens in a prime swarm. It is true that two or more prime swarms might unite, as frequently happens, in which case there would be a plurality of swarms, as well as queens. This is no part of nature's plan, however, since it could not happen except where several colonies are assembled in proximity, by the interference of man.

With reference to the wisdom of nature's method of hinging the existence of the swarm upon the life of a single queen; nature has evidently decreed that it is the wiser course to provide against accident to the queen while traveling with the swarm, by leaving behind a sufficient number of unhatched queens and drones, to ensure the safety of several after swarms. In which case should the swarm come to grief, it is only *a part of the increase* that is lost, and the original colony still remains, and is rejuvenated by the departure of all the old folks, leaving nothing behind, except the combs of brood and honey, and a few straggling bees. These augmented by a goodly number of returning field bees, and the rapidly hatching brood, the strength of the colony will be recuperated in time to discharge an after swarm, as soon as the oldest queens are of flying age. This operation is liable to be repeated as long as sufficient unhatched brood and a plurality of queen-cells remain.

Viewing it from *nature's* standpoint, the loss of a prime swarm is of little moment, but to a *beekeeper* it means the loss of the honey crop, for with the swarm go the workers who would produce it. Concerning the kingbird, if one should fly into a moving swarm by accident, or with avaricious intent, self preservation would undoubtedly forbid any attempt or desire to swallow the queen.

The period of the greatest danger to the queen is during her mating tour, and having passed this period in safety, her chances of a long and useful life are good; since accident along other lines is chiefly due to the interference of man.

Concerning the four queens that Mr. Bigelow found in as many small bunches of bees, this is characteristic of after swarms, in which a plurality of queens may be expected, in numbers ranging all the way from two to a dozen.

Concerning drones, the swarming season is indeed a holiday season for the gay and festive drone; and his

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A Kansas Apiary Owned by Geo. E. Capwell, of Cottonwood Falls.

deep bass voice, mingling with the shrill treble of the workers, makes a pleasant harmony, and forms the well-known bugle note that heralds the issuing of a swarm of bees. At the sound all hands join in the chorus, and the inmates of the hive, old and young, male and female, great and small, all seem bent on getting out of the hive as quickly as possible, evidently for the purpose of joining in the exercises, and enjoying the festivities of the occasion. It frequently happens that these noisy demonstrations will influence other colonies to join in the holiday orgies, when a general melee ensues that is likely to make things interesting for the beekeeper. On such an occasion I have had 9 swarms out at the same time. It was on July 4, and the bees seemed to enjoy the holiday better then we did.

Concerning Mr. Bigelow's hypothesis that drones have a purpose in accompanying the swarm, isn't it going a little too far to attribute to bees a motive for their acts? Evidently nature has decreed that they shall accompany the swarm for the purpose of performing certain necessary functions for which they were especially created. This decree makes it just as natural for drones to accompany the swarm as for queens; for they are a part of the commonwealth of the community, and their presence is necessary for the perpetuation of its existence. In reply to the question by Mr. Bigelow, as to why the drones accompany the swarm, permit me to further say that the method that nature employes to induce drones to accompany the swarm, may perhaps be the desire to perform certain functions as already mentioned. This is merely a matter of conjecture, however, and evidently the first answer to the hypothetical question is the nearer correct.

If Mr. Bigelow will pardon the liberty, I would further suggest that it is hardly worth while to try to find out why bees do certain things in a certain way, for mother nature wouldn't tell us if we asked her. The knowledge that they will always do things in the same way, under like conditions, is sufficient to enable us to manage them intelligently, and I fail to see wherein a knowledge of the whys and wherefores of the case can benefit us. Especially since nature has not seen fit to enlighten us along these lines, but commands obedience to her laws without offering any excuse for their existence.

Undoubtedly the piece of honeycomb that Sampson took from the carcass of the lion contained the orthodox number of queen and drone cells. All things considered, is it really worth while to question the wisdom of nature's methods? It is true that mother nature is sometimes rather lavish in her supply of drones and queens, but she cannot be expected to be everywhere at once, and therefore should not be blamed if a refractory colony, taking advantage of her absence, builds too much drone comb and too many queen-cells. And when we consider the multitude of her subjects, all bent on violating her laws and frustrating her plans, it seems ungenerous to cast reflections upon the wisdom of her methods just because she cannot afford two or three queens for every swarm.

Birmingham, Ohio.

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Cleaning Out Pollen-Filled Combs

BY EDWIN BEVINS.

I HAD a peculiar experience with a colony of bees this season. The colony was in a hive holding 8 frames, 2 inches deeper than the standard frame. It was strong early in the season, and wishing to get the queen at work in combs of standard size, I put a hive-body filled with combs on top. The flow had been on some days before I examined the colony, and I then found the combs in the upper story full of honey, but no brood in any of them.

Thinking the queen must be below I took off the upper story, put a queen excluder on the lower hive, then put on a hive-body filled with empty combs, and put the filled body on top of that. Honey was coming in freely, and I soon discovered that another set of empty combs was wanted. I took off the two filled bodies in order to put one filled with empty combs next to the brood-chamber, and then as it was too big a lift for me to put the body first filled on top of all the rest, I put it on another hive standing near, which had but one super.

A little later I saw that something was wrong with the colony about which I am writing. Wishing to carry some supers with sealed honey to the extracting room, I opened the body that I had put on another colony in order to take away part of the combs, and not have to carry all at once; but found that a large part of the combs were filled with brood. I had given the queen to the stronger colony, and the bees had, of course, destroyed her.

I did not examine the old colony for some days, but when I did I found the 8 deep combs solidly filled with pollen. I took the excluder away and also one filled super. In the other super I put a comb having eggs and larvæ, in hopes that the bees would rear a queen. At the third trial I succeeded. It is now Oct. 7. A few days ago I put the upper story below, and then shook all the bees with the queen from those 8 deep combs in front of the hive. There was no pollen in any of these 8 combs, and they were about half filled with honey.

If the description has any value, it is from the method by which I got pollen-filled combs cleaned out by the bees.

Leon, Iowa.

◆

Swarms—Queens and Drones

BY A. D. D. WOOD.

I HARDLY agree with Dr. Bigelow's article, but perhaps he has good ground for writing as he does. I am glad his article came as it did, right on the heels of an experiment I conducted this last June, and by which I am fully convinced the Doctor's views and mine are far apart.

On June 10 I had a large swarm issue, and upon going to the hive I noticed the queen about 2 feet away, and sat down to observe what they would do when they returned. (I strive to have all laying queens clipped.) This time I wanted to study developments. The bees clustered; a few bees stayed with the queen. In less than five minutes the swarm commenced to return; there were no virgins with them this time. For seven consecutive days they came out; each time the queen was watched, and each time the bees returned; no virgins at any time. On the eighth day they came out, and the old queen went so far that she would not have returned even if the bees did. But the bees stayed, and the virgins came with them this time. I caged the old queen and placed her at the entrance of the old hive; took my basket, shook the bees in it, and commenced to hunt. I found two virgins. I set the basket in the shade and they all returned to the parent hive. The next

Bee-Keeping in Oregon. Mr J. H. Berry, of Central Point, and a portion of his bees.

day out they came with more virgins. I gathered them in the basket and placed them in my bee cellar for 24 hours, as by that time all but one virgin would be killed. There were four dead virgins in the basket.

The Doctor says kingbirds might catch the queen. Did any one ever kill and dissect a kingbird? It is an old traditional saying that they are bee birds. Well, they are, but what do they catch? Nothing but drones, as far as I have been able to see, and I have dissected at least one dozen, for I, too, was sure they were guilty. So I am afraid the Doctor's queen that absconds with the swarm is perfectly safe.

This article would be too long to enter into all the details, so I will only touch those that are the most familiar to every one. If your swarms came out prior to 10:30 a.m., there were very few drones with them. If between 10:30 and 2 o'clock, there would be a multitude of drones to alight with the swarm, as they are foolish and will follow the crowd from all hives, for at that time they are taking their daily flight.

I strive to have as little drone comb as possible. I have many hives that do not have a single drone hatch, but there are drones in them all summer. They come from other hives. They are not there because of virgins; but as the little boy says, "Just for instance." Drones have no choice of home unless the hive is pretty well isolated. Years ago, when I bred Italian bees only, I had some queens that produced very yellow drones, and some that produced very dark. They would mix all through the yard, the dark with the yellow and the yellow with the dark.

Lansing, Mich.

A Peculiar and Unusual Time to Take Honey

BY C. W. REES.

LAST winter (1912) I visited my old home in Kansas. One pleasant afternoon in February a friend, an old neighbor, came over and asked me to "rob" his bees. He said that he had taken but little honey yet. The sun was shining brightly, and it was warmer than it had been a good part of the time, and I thought perhaps we could take some honey from the bees, but he surprised me by saying, "Not now; it is too warm. Come early in the morning before the bees can fly. They can't sting us then." Next morning I was at my friend's house early, for I wished to see and learn how it would do to take honey when bees could not fly. We took the honey from two or three hives, then he said, "It is too warm now; wait until a cold spell comes; these bees are too lively now."

It was not long until there was a storm, a snow storm, I think. When it quit snowing I hastened to the bee-yard, and my friend and I with smoker, pans, buckets, knives, hammers, chisels, etc., attacked the poor bees without mercy, for most of the covers were nailed on tight. The supers, some of them, had extracting frames in them, and some had sections filled with honey. The brood-nest had three frames running crosswise, I think. I don't remember whether any of them had more frames or not. The bees were, or had been, closely clustered on the combs in the brood-nest before we commenced to hammer and pry the hives apart; for supers as well as covers were nailed fast. But few bees tried to fly, and these soon fell to the ground with cold. The others, what few there were in the supers, soon ran down when we smoked them, and the supers that we could get the covers off easily had no bees in them, so all we had to do was to pry off, carry them to the house and cut out the honey. The supers were not very hard to get off, for the comb and wax were so cold and brittle they broke apart easily, as it was freezing cold. The extracting frames came out easily, but the sections were apt to break.

He had, perhaps, 20 colonies of bees, and we took the honey from the most of them, if I remember right. It was a cold job, for part of the time we had to work barehanded. We wore overcoats, overshoes, and caps drawn down close over our ears to protect them from the cold.

There may possibly be one advantage in taking honey in the winter, but there are many disadvantages. For my part I had rather take it in the summer, when the thermometer registers 100 or more degrees.

Pearsall, Tex.

Does It Pay to Make a Honey Exhibit at County Fairs?

BY J. H. BERRY.

OCTOBER, 1910, I made my first exhibit at the Rogue River Valley Fair at Grants Pass, Oreg. Before that I had a problem on my hands. It was to know how to sell what little honey I had secured. This solved it for me. Now I do not have to advertise. The hard thing to do now is to get honey to supply the demand, and I even get orders from California. I also exhibited golden bees and sold a number of queens.

The golden bee is the bee for me. At the fair these bees were the most attractive exhibit there was, and I would have to close them up at times; the eager folks would block the gangway so no one could pass. If you have never tried such an experiment, try it once. You will be surprised how much attention you can attract by making a fine exhibit at the fair. Be sure you have a one-frame observation hive, for that holds the crowd while you show your nice honey. Even for a local trade it pays big.

I had $75 worth of honey in my exhibit, and I would have been glad if it had been $700 worth. I could have sold it all. I had goldens and 3-band Italians there. I took first prize on both, and on extracted and comb honey, beeswax and honey vinegar. All these things attract attention.

I have 250 colonies of golden Italians run for extracted honey. This has been the poorest year we have had for 5 years. I only got about three tons of honey. The bees are left in fine condition for winter. We never think of feeding bees in Rogue River Valley. I started with 15 colonies 5 years ago, and made an average of 150 pounds of honey for 3 years. Last year averaged only 100 pounds. I am not yet through extracting this year, so I cannot tell what the average will be. My increase has been made mostly by buying bees. The 5-band goldens are not inclined to swarm, if they have room to store honey. What I have of the 3-band always swarm and do not gather as much honey as the 5-band goldens.

I cannot say anything about the wintering problem, as our winters do not compare with Missouri or Illinois. Our bees had a flight every week but two last winter, and had some brood all winter. On Jan. 30 they had 5 frames over half full of sealed brood.

I notice prospectors, who come to visit this country, always follow the Southern Pacific railroad through the center of the Willamette Valley. This is not the part for honey at all. Along the Coast Range, on the side of the mountains next to the coast, is the best. There the honey is gathered from white clover, maple and fireweed and wild blackberry. All these produce white honey. We get our honey here from alfalfa, sweet clover, and pear and apple. The honey is of fine quality, but it candies quickly.

Central Point, Oreg.

Mr. Berry and His Exhibit at the Rogue River Valley Fair.

Why Do Drones Go With a Swarm?

BY DR. C. C. MILLER.

THAT article on page 348, by Prof. Bigelow, is something out of the ordinary, and has no doubt been read with lively interest by others as well as myself. I can but admire the courage of a man who is not afraid to risk his pate, as he expresses it, by boldly attacking venerable traditions well established and universally accepted. So he will not feel disappointed if I attempt to voice some of the thoughts that may arise in the minds of many, albeit I am generally none too conservative as regards the traditions in general.

To the question, "Why do drones go with a swarm?" his answer is something like this: "With every swarm there are always to be found a number of drones, and there being no other satisfactory explanation for their presence, I am led to believe that in every swarm there are several virgin queens, and the drones go with the swarm for the purpose of mating with these virgins.

I feel pretty sure that Prof. Bigelow will take it good-naturedly if I squarely take issue with him, and say I don't believe there are several virgins in every swarm. More than that, I don't believe the majority of swarms have several virgins in them. More than that, I don't believe that in the majority of swarms a single virgin is to be found. Leaving the negative, let me give my positive belief, a belief that I think is entirely in the line of accepted traditions.

I believe that in a prime swarm there is no queen except the old laying queen. In these days I think prime swarms out-number the after-swarms, and so I believe that in the majority of cases no virgin is to be found in a swarm. There may be rare cases in which something has happened to the old queen, and so a virgin goes with the first swarm, but whether that can be properly called a prime swarm is a question. I believe that in an after-swarm there will be found a virgin, and only one, unless it be the last after-swarm. Of course, the first after-swarm may be the last, but so long as further swarming is contemplated the rule of the bees, with possible exceptions, is that only a single virgin will go with the swarm.

At the very outset Prof. Bigelow questions the teaching that "the old queen leads the swarm and leaves in the hive several unhatched queens that will in the future emerge and provide for the continuance of the colony." If "the old queen leads the swarm" is to be taken literally, Prof. Bigelow does well to object. I have seen many a swarm issue, and have seen many a queen issuing with a swarm, and never yet did I see the queen issue in advance of *all* workers. She may come out after only a few workers have issued, or she may

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Apiary of D. E. McDonald, in British Columbia.

come any time after that until the last workers are out. Indeed, the swarm may issue and sail about without any queen, even settling for a time upon a tree, as I have seen many a time with a clipped queen. I hardly think it is generally taught that the queen really *leads* the swarm. Certainly no experienced beekeeper ought to think so.

But from the fact that he does not particularize upon that, and from what he says afterward, that can hardly be the thing to which he objects, and the only other thing I can think of is the teaching that when the old queen leaves with the swarm she "leaves in the hive several unhatched queens." But, Prof. Bigelow, "seeing is believing," and I have seen the cells of the unhatched queens often. Indeed, I think I never had a swarm issue with a laying queen that I did not within a week look for queen-cells (to destroy them), and I am sure there never was a case when I did not find them.

Since writing the last paragraph it occurs to me that the thing to which you object is the teaching that the unhatched queens are for the future benefit of the old colony, with the implied teaching that none of them goes with the swarm. You say: "I have made some careful studies, and thus far I have found that almost invariably there are several queens in the swarming cluster." If you should say, "I have examined a thousand swarms, and in each one of them I found several virgins," I would have no right to dispute it, but I could say with very great confidence, "Each of those thousand swarms was a *last* swarm; and if you will examine a thousand prime swarms with laying queens you will not find a single queen beside the old one."

You say, "It is my opinion that there is no war between the queens of a colony so long as the colony is in flight or in a clustering condition, but when the bees have settled upon a home, then comes the war of the queens, and and only one survives." I am sure you would change your opinion if you should see the proofs to the contrary I have seen. I have seen two virgins engage in mortal combat not three minutes after emerging from their cells. Certainly that was before they were "in flight or in a clustering condition." I have seen a virgin digging into the side of a cell to kill a rival before it had a chance to emerge from its cell, and I have seen more than one case in which a virgin in a nursery, after having emerged from its cell, diligently dug into the side of that cell, as if seeking to destroy a rival supposed to be in the cell. Just put two virgins within speaking distance any time, and see if they postpone battle until having settled upon a home.

You cite a case in which a swarm had four clusters, a queen in each cluster. Nothing strange about that. Plenty of such cases. But you don't say that one of the queens was a laying queen. You may rely upon it that such a swarm is always a *last* swarm, and that such a thing never occurs if a laying queen is with the swarm.

You say, "I wonder if any of our veteran beekeepers have positive proof that in *any* swarming cluster there is only one queen." Like enough they might reply that the burden of proof was upon you, and ask whether you have positive proof that in *any* case you ever found a virgin in a swarm with a laying queen. For I notice that in mentioning cases with more than one queen you do not in any case say one of the queens was a laying one, yet you plainly advocate that drones go with a laying queen for the purpose of mating with the virgins that you believe are in the same swarm with the laying queen. Although I may not satisfy you with positive proof that no virgin is ever in a swarm with a laying queen, I can give you something tending quite a bit in that direction. Thousands of times I have searched through colonies for queen-cells, finding them in all stages of advancement, and never yet did I find a vacant cell from which a virgin had emerged prior to the issuing of a prime swarm. Such a cell is very easily recognized, and if virgins were in the habit of emerging even occasionally prior to the issuing of a prime swarm, surely I ought to have spotted at least one of them. Plenty of such cells I have seen a week or so after the issuing of the prime swarm, at which time the virgins emerge.

Moreover, if, Prof. Bigelow, it were as common a thing as you suppose for virgins to be in a swarm with a laying queen, don't you suppose the thousands of beekeepers who have had hundreds

Home of F. W. Hall, at Colo, Iowa.

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of thousands of opportunities to observe should at least have met with one case? Yet I never yet saw mention of such a case, and I've read the bee journals quite a while.

But you insist, "tell me why those drones go out with the cluster if only the old mated queen leads the colony." Honest Injun, I don't know. I don't know why there are so many superfluous roosters in a flock of poultry left to itself, nor why as many bulls as cows are born. It may be that the drones, like a flock of sheep, follow the leaders of the swarm. Just go for fashion's sake. If you press too hard for a rational answer as to why the drones in a prime swarm, I may venture this: It is a common thing for bees to supersede their queen in the fall or soon after swarming. I have found queen-cells that seemed to have been started about the first of the brood started by the swarm. Drones are needed for these young supersedure queens. What would be the chance if no drones came from the old colony? If drones were started at the same time as the queens, in the swarm, they would not emerge until nine days after the queens; too late to be of service. We know that no drone comb is built by a swarm for a number of days, making it still more imperative that drones shall come from the old hive to meet the prospective young queen.

At any rate, it's easier to believe that drones accompany the swarm for the sake of meeting future virgins that are well known to exist than to believe they go for the sake of meeting virgins that no one has ever yet seen in a prime swarm.

Marengo, Ill.

Beekeepers I Have Known—F. W. Hall

BY FRANK C. PELLETT.

WITH a $5000 honey crop, a magnificent home, a capable wife, and three unusually attractive daughters, it would seem that a beekeeper would be about the most to be envied of men. There are bee-keepers; and those who keep bees. F. C. Hall, of Colo, Iowa, keeps bees, and then again the bees keep him; for Hall is one of the few enthusiastic scientific bee men who burn their bridges behind them, and stake everything on making a winning with their chosen specialty. Most of us make lots of noise about the beauties of beekeeping, and the pleasures and profits to be derived in honey production, while at the same time we stay close to shore and keep our barks securely anchored to some other stay. When we have a good year we brag about our production per colony, and when we have a poor season we live by means of the prop, whatever that may be. Few of us, however, enjoy as large incomes, on the average, or live as well as the really successful specialist.

MR. HALL GOING OVER HIS HOME YARD WITH THE STATE INSPECTOR.

There are a number of beekeepers here in Iowa who are doing very well, and whose incomes are equal to those of the most favored regions of California or other widely heralded beekeepers' paradise. Hall ranks near the head of the list, and is one of about a half dozen men who are the largest producers, considering the number of bees kept in Iowa.

In the first place, as a matter of course, Hall has a splendid locality, but so have a hundred others. The real difference, after all, is in the man and his practical methods. At the beekeepers' convention last winter he read a paper which he had carefully prepared. The paper soon got in his way and he laid it down and just told us about it, and beekeepers are talking yet about some of the things he proposed. Some of the beekeepers seem to be of the opinion that it just would not work to kill off the queens and requeen at the beginning of the honey flow, but it works for Hall all right, and he gets the most honey and the least swarms per colony of any man I know.

Last year the honey crop was very short over much of Iowa, and many beekeepers had to feed for winter stores. Mr. Hall had 25,000 pounds of honey from something like 300 colonies. We all thought that was a big showing, and wondered whether he could do it again. This season is a bumper one over much of the State, and to show us the possibilities of a good year, he has proceeded to roll up a crop which is estimated to be about 25 tons of extracted honey. As he has a mail-order market for much of his honey at 10 cents per pound, it will be seen that the $5000 honey crop is not so much of a dream. Then there is no dream about his fine home. The house is large, roomy, and contains about every luxury that modern ingenuity can devise.

Mr. Hall keeps bees in 6 yards of from 60 to 80 colonies in each, and apparently this number is about the limit of profitable production, for there is another apiary of similar size within a short distance of the home yard, with the result that the production here falls much below that of the others. At each yard he has a honey house, where he extracts the honey on the ground, and a cellar where he winters the bees, thus eliminating the element of hauling, to a large extent.

If you want to know about his methods, hitch up and drive over to the next convention and get it straight and first hand. Mr. Hall is not inclined to be a "wind jammer," but when he does talk he has something to say. Yes, do come over and attend the meeting. We have great times when the Iowa bee men get together.

Atlantic, Iowa.

Comb Honey—Sections Well Filled

BY G. M. DOOLITTLE.

THERE seems to be an idea in the minds of some beekeepers that the most desirable and most marketable sections of honey are those which are filled the fullest, such as have the cells next to the wood filled with honey not only all around, but capped over so there are no places where the cappings do not lap on the wood, thus making the wood part as solidly full of honey as is a can or pail when filled with extracted honey. Such a section is called by these people "gilt edged" or "fancy." There is no question but that such "crammed sections," completed in the heighth of a heavy honey flow are attractive to the eye, but is that all there is of the matter?

The ultimate and logical conclusion rests with the consumer. The wood of the section is not the thing which is brought to the table to be admired and eaten. Basswood lumber is not eaten by the lady of the house or her guests

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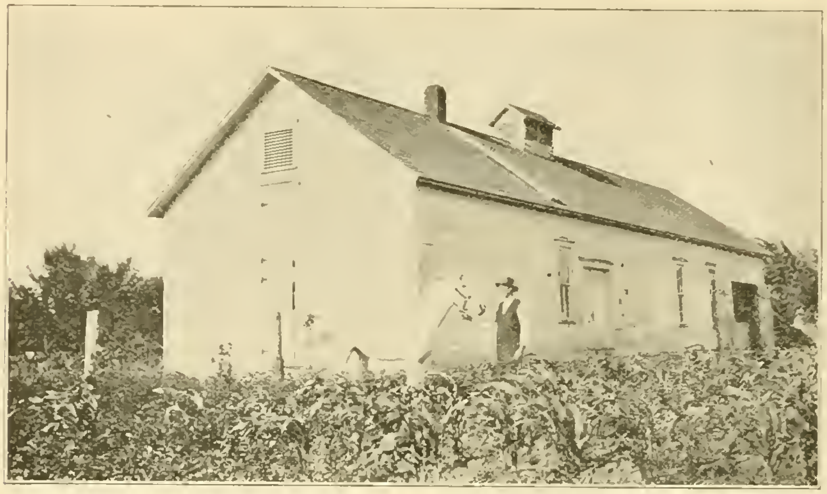

Mr. Hall's Honey House and Horse that Has Seen 20 Year's Service Hauling to and from Out-apiaries.

at the "tea party." It is the section which looks best on the *plate*, and not the section that looks best on the counter that will finally win. The more or less perplexing problem of getting the tender comb out of its covering of wood without mangling the whole affair, has got to be surmounted before it can appear as the choicest ornament of the tea table. The good hostess will always choose that section when buying (where she can have her choice), which has a row of empty or unsealed cells all around next to the wood, provided the rest of the comb is nicely capped with snow-white wax. With such a section the servant girl, or even a child, can see where to cut, and there is comparatively little cutting to do. And when the wood of the section is lifted off, instead of having all the cells on the sides "dauby" with running honey, the edges of the cake are all nicely rounded off, and will remain so. These transparent side cells will show the honey through them and set the mouths of all to "watering" for a taste.

But with "Bridget" undertaking to cut the honey from one of those filled to overflowing sections what do we have? With a case-knife in an unsteady hand she proceeds to cut out the honey. Half the time the knife wanders away from the wood. Beside the main square, several thin slices of comb with running honey have to be stacked on one side of the plate or put on top, to the serious detriment of looks. Then there will be a troublesome scraping of the section to save all the honey, or else there will be a dauby, dripping thing to dispose of in some way, with the risk of having honey dripped or daubed on the tablecloth, floor, or somewhere else to ruffle the feelings of any person who cares how the house looks.

Then, by the time the tea-party is ready for its meal, the nice comb of honey is "swimming," so to speak, in the drip from the broken cells at the sides; thus giving it the appearance of comb honey swimming in extracted, as is sometimes seen in glass jars on the market.

Fullness of section is not the great desideration some would have us believe. Yet this fullness of section and a consequent theory that it looks better and will sell better on that account is the chief argument advanced in its favor by its advocates. It is claimed that these full sections will bring a cent or two more per pound than those which are not capped to the wood all around. I have not found it so. On the contrary, a case of 20 of these filled to overflowing sections weigh more than buyers wish them to. This year the order has been that the net weight of a case of 20 sections shall come within 19½ pounds or less.

Then these very full sections require more careful handling than those with a margin of uncapped cells next to the wood. My experience has been that not one person in ten will pick up a section so as not to mar it, especially if it has sealed honey all along the wood. Most persons will pick up a section with the thumb on one side and the fingers on the other, generally taking hold at the top and pressing the fingers, if not the thumb, into the honey, which sets it to leaking. Not being satisfied, the other hand is used in the same way at the side, while the section is tipped out of the perpendicular position it occupied in the case or on the show table. This results in a still further damage to the sealed cells next to the wood.

I once hired a man who was considered the most careful of any in the neighborhood, to help me in taking off section honey and casing it. Before we commenced I took particular pains to show him how the thumb and forefinger only were necessary in lifting a section of honey by the wood at the top, and that under no circumstances the thumb or fingers be allowed to touch anything but the wood of the section. He worked with me one-half day, and spoiled more honey than double his wages, in spite of my frequent remonstrances. Although there was much comb honey to be removed from the hives, I told him that it was necessary for me to be absent in the afternoon. And it was, for had we continued further it would have led to an entire "break" with him, which is not good between neighbors.

Paper cartons over full sections fare little better. This is the reason why a part of those handling comb honey in the New York market still demand that the section be glassed the same as 30 and 40 years ago. One of the buyers, to whom I sold for several years, would not handle any other than glassed sections. He said that when his back was turned some one was sure to step in to look at his honey. Unless it was glassed, when he looked up he almost always saw the man licking his fingers, which meant to him a loss on that section.

Borodino, N. Y.

A New Method of Introducing —The Odor Theory

BY DR. BRUNNICH.

ARTHUR C. MILLER gave in Gleanings in Bee Culture, 1905, a valuable method of introducing, invented, as he said, by Simmins. I tried the proceeding often with success, and recommended it myself in the German bee-journals. Now he brings in a recent number of Gleanings a somewhat modified procedure as follows:

The dequeened or queenless colony has the entrance reduced to about a square inch with grass or wet rags; then three puffs of white, thick smoke are blown in and the entrance closed. In from 15 to 20 seconds the entrance is opened and the queen is run in, followed by a gentle puff of smoke. The entrance is again closed for 10 minutes, then opened and not enlarged until the next day.

He prefers the method with fertile queens, if possible, taken just before from a nucleus. I employed this method several times with excellent success, and could always ascertain that the queen began laying a few hours after the introduction. This is one of the greatest advantages of the method.

How is it that with the old-cage method so many queens are killed, according to my experiences? For I have observed that a queen may be accepted, but she is mutilated, and therefore in most cases worthless. I saw at different times how a queen was stung by a worker in the breast, and immediately was paralyzed in one of her legs or wings; and often I have seen such queens in my nuclei, or in colonies of a neighbor or friend. It occurs oftener than one would believe that a queen is

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thus damaged, and if it is an expensive, select queen, the bee-keeper believes he has been cheated, while it was the fault of the unsatisfactory method.

Mr. Miller does not believe in the odor theory, but I think that with it we may explain all, and without it many things cannot find a satisfactory explanation. He says that he found in his apiary, after a heavy honey-flow, that the bees of different hives had mingled to a considerable degree. I think that this experience proves nothing. On the contrary, while there was a dearth, the bees did not mingle, of course, because in times of dearth the bees are exceedingly vigilant, and do not allow the intrusion of a foreign bee, which they must absolutely recognize by smell, or any other emanation of the organ which doubtless lies in the feeler. Possibly this sense of recognition may be quite another for which we may have no analogon. But be it in the sense of smell or any other irradiation, there must be something, and if we call it smell (without preoccupation to the kind of sense), we have at all events a good hypothesis which may explain a great many of the phenomena in bee-life.

On the other hand, when there is a good honey-flow the bees have no time to watch the entrance, nor is this a necessity, as the bees do not rob at such times. We know that if our attention is not directed on some object we may not perceive it, though our senses accept the impression. If I go through a street without paying attention to the scriptures of the sign-boards, I may read them without the impression penetrating to my mind. So the bees, occupied thoroughly with honey seeking, pay no attention to the objects on the alighting-board. Otherwise how would we explain what I saw some days ago.

A queen was full of lice. I gave her a little tobacco smoke and cleaned her. When I put her in the midst of the bees on a brood comb she immediately was attacked and balled. Another queen of mine was killed when I had marked her with color on the back. Certainly it was the foreign smell which caused the bees to attack their own queen. A great number of similar examples could be given. I maintain that, until now, there is no stringent proof against the smell theory; nor has there been given a better hypothesis for explaining the above mentioned facts.

How, then, are we to explain the bad success of the cage method? We know that the bees practice different occupations according to their age; the youngest bees are caring for the eggs, and every bee-keeper has seen how those young bees are going in all directions when we take out the comb. On the capped brood we find older bees, which are collecting forces for the coming flight. On the periphery outwardly of the pollen-garland, we find the old, malign, suspicious bees always snuffing treachery. They seldom, or never more, find their way into the brood-nest, with which they have nothing to do. The place of the queen is in the midst of the youngest bees; that make a circle around her and give her the necessary feed. Unhappily the cage is placed, as a rule, into the district of the old bees, and if the queen is released, she has at first to pass them before arriving in the center. In times of a good honey-flow there is no danger. The old bees are in the field, and are in good humor, but woe to her in times of dearth when she is released and her smell is not sympathetic to the guardians.

With the direct method of introducing, the peripheric bees on the board are intimidated by the smoke; therefore, the queen may pass those ill-tempered guardians and penetrate to her kingdom, the center, where there is no longer any danger. The young bees willingly accept her majesty, and their tranquility will calm also the older bees. There is no doubt that there exists a profound concert between all bees of a hive. If there is harmony in the center, each bee of periphery knows it, and needs not convince herself by proper investigation.

Therefore, I recommed by full conviction the new method of Arthur C. Miller, especially for queens reared in the same apiary. For valuable queens coming by mail, I could not advise to adopt this process. Here the only *absolutely sure method*, which gives a success of 100 percent, even for virgins, is the *swarm method*, which is carried out as follows:

You make from one or more colonies by brushing off the bees, a good swarm, and place them into a swarm-box. The queen has been placed before into a tube of wire, closed at one end with a cork; at the other end with good bee-candy. Immediately the swarm is put in an absolutely dark, quiet place (cellar), and fed near the place of the queen with honey-water. After 2 to 24 hours the swarm is put into the hive as an ordinary swarm. The method is, as I said, absolutely sure, if you have not brushed into the box another queen, and it has the enormous advantage that such a colony will work with all the intensity and zeal of a swarm.

For introducing a valuable queen into a dequeened colony, one may proceed as follows: Brush the bees from 2 or 3 brood-combs of the colony into a swarm-box as before. Place the box above the colony, but not connected with it. After 2 days remove the cover of the box and place it in an empty super just above the brood-nest of the colony. Gladly the bees of the hive will join the little swarm and thus accept the queen, which will soon descend to the hive.

Zug, Switzerland.

Bees and Odors

BY D. M. MACDONALD.

THE sense of smell in bees, wherever we may choose to locate the organ, is extra acute, as all who spend a good part of their time in an apiary acknowledge. The balmy airs of spring blowing over a bed of violets gladdens our olfactory organs; much more does a field of white clover, a stretch of heather, a wood of basswood, or a plot of alfalfa prove attractive to the denizens of an apiary. Odor, wafted to them by the prevailing wind, carries miles away the information that there is the source of forage.

Let unprotected honey or syrup be exposed and soon will a large army be attracted. Let a poorly protected set of combs in a queenless or weak colony be scented, and how quickly will a robbing boom be established. Extracting in the open is im-

Apiary of J. B Hollopeter, at Pentz, Pa —(See "Reports and Experiences."

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possible when a flow of nectar is dried up. Outside feeding, unless very carefully carried on, demoralizes a whole country side.

No less acutely are the organs of the bee affected by noxious perfumes. This was acknowledged by beekeepers before the Christian era. Virgil wrote: "And suffer not a yew near the bees' homes; nor burn in the fire the reddening crab-shells, and do not allow them to be near a deep pen, or where there is a noisome smell or mire." Bee-books from that time until now advise to locate an apiary apart from any offensive smells. Nothing taints more readily than both wax and honey when in proximity to a foul smelling substance, which is another sound reason for avoiding what would arouse the antipathy of bees. Therefore, the even temper of the workers, the equable temperature of their keeper, and the delicious flavor of their luscious sweet, are all influenced by offensive odor.

Odor also plays an important part in the well being of the community, because by it bees know their own sisters and their own queen, owing to the colony odor being the same. Queen introduction, union of different stocks, or the amalgamation of separate communities, requires a unification of odors if the two are to become one peaceably. Guards "spy" would be intruders mainly by the wonderfully acute smell hollows possessed in such vast numbers in their antennæ.

ODOR ANTIPATHIES.

No creatures are more susceptible to certain odors than bees, and as a result of experiments, I am led to think that ire in bees, and the consequent stinging mania, is very frequently produced by some such cause if matters were intelligently analyzed. "The stable odor" is generally credited with being most offensive to bees, but this is only partly true. A sweaty horse is anathema to them, unfortunately at times for the horse. Perspiration has for ages been set down in this list, but again this is only partially true. Perhaps a *dirty* sweat may, but a clean sweat does not always produce irritation. Well for many beekeepers that it does not, because at certain seasons, and under certain circumstances, he must be a very cool man indeed who can carry out a day's work among the bees without perspiring. A "stinking breath" *is* offensive to bees, yet snuff takers, tobacco chewers and smokers work among them unmolested.

I have seen, however, a man arouse very quiet bees to a state of frenzy by blowing in a few puffs of a foul breath when he was "out of condition." At other times he could breathe on them with impunity. I once received a very genuine stinging owing to the use of corrugated packing paper as a smoker fuel. It had been used in forwarding some kind of alcoholic compound, I afterwards learned, and whatever its nature it certainly converted generally good tempered bees into veritable demons. The whole population it seemed took wing instantaneously. The carbolic cloth properly prepared and applied acts as either a quitener or a regular intimidant; but cases have come under my notice when it roused bees to fury. Sometimes when it was undercharged, and at other times when it was overcharged with the solution.

I have consistently advised that the apiarist should not handle his bees with unwashed hands. "Cleanliness is next to godliness" is a truth worth impressing on the bee-keeper for the sake of the produce, which, like Cæsar's wife, should be above suspicion. In addition, however, the rule is a wise one if we consider only the bees. We handle so many tools and implements, so many plants and weeds in our gardens, and so many other articles in the course of the day—all more or less tainted with foreign odors—that to keep the bees' tempers sweet and equable, it is wise to deal with bees, frames and supers with clean hands.

The receptacles in which honey is stored should be very carefully washed, and then rinsed in clear water to ensure that no smell is left from the soap and other purifiers used in the cleaning. The same may be advised in regard not only to the extractor, but also as to all tools, implements and appliances which may come in contact with surplus either directly or indirectly. Much of the honey which is imported into this country suffers more from these foreign taints than from the inferior grade of the honey sent us, if it were consigned in its purity.

Some years ago we had great trouble owing to some foundation used being rejected by the bees on account of its offensive odor. Bees worked it under compulsion at times, but in general they avoided it, and even swarmed out rather than accept it. Under more modern modes of manufacturing it this danger is a thing of the past, if the parcels are kept apart from strong smelling substances. If wintered near some of these, bees will reject otherwise perfect sheets on account of the odor.

BEES AND CHASTITY.

A strange, persistent undercurrent runs through bee literature and literature dealing with the bee to the intent that the very occupation, or the close association with so model an insect, encourages purity, gentleness and goodness. It crops up in many classic writers of ancient Greece and Rome. Then it persists in the classics of early English literature. We have it, too, in the Koran, wherein rules are set down for the guidance of beekeepers.

1. No family may quarrel or live in discord.
2. Two partners in an apiary must agree on all points, never suspect dishonesty or unfairness in each other.
3. In any house where hives are kept no stolen object should be permitted.
4. No wickedness of any kind shall be allowed at such a house.
5. No guilty hand shall be allowed to touch a hive.
6. The surroundings of an apiary should be very clean; otherwise the bees will perish or leave their dwellings, bringing a curse on the neighborhood.

Perhaps these terse but emphatic rules are an embodiment of the wisdom of the centuries going before. Perhaps they took their origin in the strange anomaly of the very existence of these vestal virgins of the hive, the worker females! The purity of their lives cannot be questioned, and the high moral tone of their efforts for the existence and well being of the community is high souled and inspiring. Self-abnegation is the rule of their lives. The commonwealth is all in all to them. They themselves and their success or failure is less than nothing. And they go on "toiling and spining" for the good of a generation they will never live to see. There is something so high and holy in this grand rule of duty first, and the complete sinking of self for the well being of others, that we must admire and wonder, while our admiration must at times be tinctured with awe. Another enigma of the hive.

Banffs, Scotland.

DR. MILLER'S ANSWERS

Send Questions either to the office of the American Bee Journal or direct to
DR. C. C. MILLER, MARENGO, ILL.
He does NOT answer bee-keeping questions by mail.

Cross Bees

1. Can you tell me why my bees are so much more cross this season than usual? I handle them the same as I have always done, using smoke and avoiding undue haste, etc., and there is no robbing going on. The trouble is not while handling them, but they have taken to coming up to the door-yard and lawn, and threatening (and once or twice stinging) any one who happened to be there.

I have always had Italians, until last year I experimented with Caucasians in the hope of finding a race of bees better adapted to this climate. The Caucasians have a good reputation for gentleness, and last year I really thought them more gentle than the Italians, at least to work with, and I am quite sure they build up faster in the spring. Are they more likely than the Italians to leave the hive to hunt trouble? Can it be that the crosses are more vicious than either breed if kept pure?

2. Can you suggest a remedy? Would it do any good to put a shield up by the side of each hive so as to hide the premises from

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the occupants of the hives? The hives (30 in number) are in a small orchard of young trees, and most of them are out of sight of the house, only two or three being plainly in view, and it seems to me that the cross has come from these hives. Would a high fence be a pretty sure cure for the trouble, or will it be necessary to move the apiary to a greater distance from the house, which I would very much dislike to do, as they are in a nearly ideal location now?

3. This has been a remarkably good honey year with me. Is this due in part to my Italian-Caucasian crosses? SOUTH DAKOTA.

ANSWERS.—1. I don't know what is the trouble, but I can make up a pretty good answer by adopting the suggestions made in your questions. It may be said in advance that there seem to be times when bees become especially cross without any apparent reason. Caucasians started out with the reputation of being the gentlest bees known; but some strains of them have been reported as cross. Generally, too, any cross is likely to be crosser than pure stock.

2. A high fence would be a help, and might be a full remedy. If a bee upon leaving its hive is obliged to rise above a certain level, it is not likely to go below that level anywhere in the vicinity of the hive. An entirely close fence is not at all necessary. A fence with slats or palings having 2 inches space between them will answer. Vines or bushes will do, only so they are high enough. Poultry netting answers. Instead of a shield at each hive (which, however, might be all right), it will likely be better to have a single fence of some kind to answer for all; say 6 feet high or more. Quite often all the bees in the apiary will seem cross when really only one or two colonies are the culprits. If you will recall, you will probably remember that at most not 50 cross bees are threatening you. A single colony can easily furnish that number. It isn't the easiest thing in the world to spot the cross colony, but by persistence you can do it, and then change the queen. For some reason I don't know; the bees upon receiving a good-natured queen become gentle before the bees of the old stock have all died off.

3. Most likely it's the season that deserves the chief credit. You're not the only one who has found this the best season ever.

Questions from China

1. I have several colonies of English black bees. They are smaller than the Italians, but more active and diligent. They are so small that the bees rear drones in worker-cells, so there is always a great number of drones in the hive. On this account I tried to Italianize them, but without success. They absolutely refused to accept the Italian queen, nor were the Italian queens themselves willing to join them, no matter how long the queens were caged in the hives. A friend of mine told me that the English black bees, as well as the native bees in China and Japan, cannot be requeened with queens of other species. Will you please tell me if there is a special way of Italianizing them? What do you think of the English black bees? Are they worth keeping for profit? The worst is that they have always too many drones which consume and reduce the honey crop. Having such a disadvantage, I wonder why the British apiarists prefer them to other species.

2. I have just bought some Italian bees of red clover strain from Japan last month, but I found that they don't work as energetically and actively as the English black bees. My friend in Japan told me that the Italians are not active during a dearth of honey, but when the flow comes on they will excel the other species. Did you have the same experience with the Italians in your country? The queens of my Italian bees have the whole of their abdomens of dark red color; the workers have also red abdomens, but with two or three black bands, and the tip of the abdomen is also black. The drones are very large; they must have large drone-cells to rear them. Are my Italian bees mentioned above pure red-clover strain? CHINA.

ANSWERS—1. I have some doubt whether your black bees are the same as the black bees they have in England, which are, I think, of the same size as the black bees of this country. I have never seen it stated that English black bees are noticeably different in size from the Italians. There is no special trouble in introducing an Italian queen into a colony of black bees here, and the same combs that the one kind of bees build are acceptable to the other kind. Neither is it the case that black bees rear drones in worker-cells, unless in the case of laying workers or a drone-laying queen. Certainly the English black bees are worth keeping for profit, and probably the majority of bee-keepers in England think them more valuable than Italians. Neither do the blacks rear more drones than Italians. If you get such black bees, combs and all, as are in use in England, you can easily change them into Italians.

2. The reputation of Italians here is just the reverse of that given by your Japanese friend. The Italians here keep gathering at least a little at times when the blacks gather nothing. Red-clover strains are not always reliable. Some of those sold as red-clover bees do not work on red clover. Even if they do work on red clover, the trait is not a permanent one, and the next generation may not work on red clover at all. Red-clover bees are not considered different in appearance from others, so that it is impossible to tell from description whether you have such bees or not. The only way to tell them is to see whether they work on red-clover blossoms or not.

Screen Colony House to Prevent Robbing

Have you in your country or elsewhere ever tried to make hives and keep bees in the following manner; Seeing the bees in an apiary, during a dearth of honey or even in a light honey-flow, often resort to robbing, it occurred to me to build the hives with wire-cloth on the two longer sides, and put them in an outer case, so that the wire-cloth sides of the hives touch each other, and all stand on a long bottom-board which is divided with scantling for each hive to stand on, and with a separate entrance for each hive. The outer case may be built for holding from one to ten hives, each side by side crowded together.

In this way, I think, colonies that are so put together will be prevented from robbing, because the colonies are only separated from each other by two pieces of wire-cloth on the sides of the hives, and the smell of each colony is thereby mixed, so that when the bees enter any of the hives in the same outer case, they would not be able to detect it is not their own hive. On the front of the outer case the entrances are separated or partitioned by nailing pieces of tri-angular boards between each. The front wall is to be painted in different colors.

Do you think such a combination of hives in one outer case practicable? I think it has the advantages: 1st, prevents robbing at least among the colonies so put together; 2d, it saves room, as one outer case to hold 10 hives would only occupy about 14 feet; 3d, it gives mutual warmth in winter, and 4th, you can take any number of bees from one colony and put it in the other without fear of fighting.

If you think my above suggestions are practicable, and will not affect the working and well being of the bees, I will make one and try it. CHINA.

ANSWER.—Your scheme is quite ingenious, and ought to work all right if the four foundation stones you mention are all right. Taking the four in reverse order; the 4th may be all right; the 2d and 3d certainly are; but how do you know about the 1st, which is the chief corner-stone? Have you any proof that bees will not rob from another colony having the same odor? On the contrary, have you never heard of cases called "silent robbing?" I don't think they are common, but they do sometimes occur. A swarm is found to be carrying away honey from the mother colony silently, and without any fighting, and the explanation given is that the bees of the mother colony do not recognize the robbers as outsiders because they are of the same odor.

A plan somewhat after the same order was exploited in the British Bee Journal a few years ago, but little has been said about it lately. Two colonies were side by side, separated not by wire-cloth but by excluder-zinc, and allowed to work in the same supers. One trouble was that too often one of the colonies went queenless, perhaps because of the similar odor the queenlessness was not recognized in time.

Swarm Prevention

About the time that natural swarming may be expected to begin go through the hives, cut out queen-cells and cage all queens. Seven or eight days later go through the hives again, cut out all queen-cells except a choice one in each hive, and remove all caged queens. The cell left in a hive need not necessarily be from that hive. The choice hives would probably have several frames with queen-cells in them, and these could be distributed among the inferior hives.

I judge from "Forty Years Among the Bees," that if this method were carefully carried out, there would be little or no swarming, but I am uncertain as to the effect on the honey crop. In my locality the surplus season is generally from about the middle of May to sometime between July 1 to 15. VIRGINIA.

ANSWER.—If swarming begins, as it does here, at about the beginning of the harvest, then you would cut cells and cage queen about May 15. Then May 23 you would remove the queen and leave one of the cells started after the queen was caged. A queen would issue from that cell about May 27, provided the bees started cells promptly upon the caging of the queen, and provided you happened to leave one of the oldest cells. Then, at the earliest, the queen might be laying eggs about June 4, and workers would emerge from them June 25, becoming fielders about June 30. There's a break in laying from May 15 to June 4, or 20 days, and all eggs laid in that 20 days could have been counted on to help gather the crop. In a good many cases you will find that everything would not work up to schedule time, making the break still more than 20 days.

I don't just see what you gain by keeping the queen caged instead of removing her at once.

Baits—Swarm Prevention

1. One of my colonies did nothing in the supers (comb honey) all the season. I wanted to give it a new queen. The queen arrived nearly dead; her company all dead. On examining that colony it was found heavy, full of bees, eggs, and every kind of brood and honey. So I had no heart to kill the queen. I was so hurried for supers that I made a few hive-bodies myself, and ordered insides to come by mail. Before the latter arrived I put on a home-made super and just threw in helter-skelter odd pieces of wood. By the time the insides had come quite a lot of honey was stored; so I thought I had gotten those bees to work, and put on a full-fledged comb-honey super, but in that they again did nothing. I have this year tried shallow frames at each side of the super and sections between, with but very indifferent results, and cannot thus agree with Townsend who asserts that such beat *baits*.

Baits, I contend, are the thing. What I will try next year is with some colonies in the start, to give them supers all full of shallow frames, and after work has been done in them, "swap" for section supers, and I will keep on again and again using initia torily those same shallow-frame supers; as after but little work has been done in them by colonies getting them first, subsequent colonies might the sooner take to same, preliminary to getting regular section supers. Would it be best to use a queen-excluding honey-board with shallow-frame supers?

2. In a method of swarm control, J. E. Chambers, of Texas, says that "when a colony is found getting ready to swarm, he removes one comb with adhering bees and brood, and sees that such comb has, 'at least,' two sealed queen-cells." Will you describe how a colony would have to look inside before you would apply such methods, or shook swarming?

3. Is one queen-cell *only* capped in a whole colony enough?

4. It might seem that (besides) there may be few or several queen-cells in a colony, but no more than one on a frame. How about then deferring procedure until there are two queen-cells on some one frame?

On page 301, Miss Wilson quotes Miss Candler's method of swarm proventing—the above question as well applies to latter.

PENNSYLVANIA.

ANSWERS.—1. One cannot help wondering why the bees began work on those "helter-skelter" sticks and then refused to work on orthodox arrangements. Just possibly, if you had revrsed the proceeding, giving the regular surplus arrangements at the time you gave the sticks, and then the sticks when you gave the regular, yon might have found the action of the bees reversed, for the flow of nectar may have been the deciding factor.

I have never tried Townsend's way side by side with bait-sections. One would be a little inclined to give the preference to Townsend's plan in the belief that the combs on the outside would at least be a *larger* temptation than a single bait-section in the center; yet the fact of the bait being in the center might give it some advantage over a comb at the side. But with several baits and a central location I would expect the bait-sections to be ahead. I surely know that I don't have any trouble in getting bees to start in the baits if they have anything to store there, and in a poor season I've had all bait-sections used, mostly filled and sealed, and nothing more done in supers.

I think you will do well to use excluders under your shallow extracting-combs.

That scheme of moving extracting-supers from one hive to another as fast as work starts will no doubt work; and so it will if you shift section-supers in the same way. It might be worth your while to try some in the way you propose, and others merely with baits, and report results.

2. Just one thing to look for inside to see whether a colony contemplates swarming (which is generally equivalent to saying it is ready for swarming), and that is to see several queen-cells started. I'd like to be more definite and just say how many, but there is nothing very definite about it. They may start half a dozen, 20, or more. If less than half a dozen I should guess it was a case of superseding rather than swarming.

3. As already intimated, a single cell started would look like superseding, but if a number of cells are present, and only one capped, that would be all right, only if that one has been capped only a short time, which is likely to be the case, it would be full as well to wait a little longer.

4. If you find a single cell on each of half a dozen combs, don't wait; that's just as well as if they were all on the same comb; only you will likely always find at least one comb on which more than one cell will be found. Having two cells on a comb is a matter of security, for sometimes it happens that a cell contains a dead larva. If it suits you any better you can cut a cell or cells from other combs and fasten on the comb you have chosen, selecting, of course, the best-looking cells. In general that will be the ones having the deepest indentations on them.

Parthenogenesis

I have carefully read the clipping referred to by "Illinois," on page 352, current volume of American Bee Journal, and am constrained to repeat the question, is it true? I am aware that I am stepping upon very "thin ice," and admit that I am poorly able to support that "ice" from above or below except by theory, backed by the lessons which nature has taught, and is continually teaching to those who have the ability and willingness to observe. I venture the assertion that if drone-bees are hatched from infertile eggs, nature, in all her mysterious as well as comprehensible processes, has permitted this one lone exception.

With the profoundest respect for you, and heartily joining you in respect for the memory of Dzierzon, I can but doubt the long accepted theory. It is a well established theory of physiology that the female is provided from inception with every ovum which she will produce during the period of reproduction, and that these ova are male and female. When these are fertilized they—under favorable environments—bring forth "each one after its kind." The queen-bee deposits eggs, male and female, in varying proportions, and from the peculier nature of the work of preparing for race perpetuation, deposits mostly females, as nature, from the beginning, had provided these worker bees (immature females upon whom evolves the task of looking after the interest of the race) who are able to distinguish the sex of the embryo bee, and proceed to destroy or nurture as the exigencies of the colony require.

MISSOURI.

ANSWER.—Not being a scientist, but only a practical beekeeper, it is hardly in my line to discuss that Dzierzon theory, or parthenogenesis. The safest thing might be merely to say that so far as I know the theory is quite generally accepted among scientific men, and you are entirely within your rights to reject it if you wish. Still, it will do no harm to talk a little about it, even if, as you say, I may be on thin ice. Wouldn't it be a joke if the thin ice should give way, and we'd both get a ducking?

You say it is a well established theory that the female is provided with every ovum which she will produce, and that these ova are male and female. If that be true, it settles the whole business at once, and sends the Dzierzon theory kiting. I venture, however, the guess that you may find such a theory not so well established after all. I may mention one or two things you must "buck" against before fully settling down in that belief. Microscopic investigation shows, I have read, that when the queen is fecundated her spermatheca is filled with spermatozoa from the male; that these same spermatozoa are found in the eggs in worker-cells, and that no such spermatozoa are found in the eggs while still in the queen's ovaries, nor yet in the eggs in drone-cells. Moreover, the eggs of an unmated queen, if she lays at all, will produce only drones, no matter whether they are in drone-cells or worker-cells. Doesn't that look as if the eggs in the queen's ovaries are all alike, instead of being male and female?

You call the hatching of drones from infertile eggs "one lone exception." Beg pardon; plant-lice also lay eggs that produce life without impregnation, and perhaps other things.

Here is what is to be found in the Standard Dictionary:

"*Parthenogenesis*, reproduction by means of unfertilized eggs, seeds or spores, as in many rotifers and polyzoans; production of a new individual from a virgin female without intervention of a male, as in plant-lice and some hymenoptera."

Please don't think that's a definition of my making. Although I was editor of bee-terms, I had nothing to do with that definition, and you see it gives parthenogenesis as a thing settled. Still, if all this doesn't "cut any ice" with you, you have the privilege of standing on whatever ice you like.

REPORTS AND EXPERIENCES

A Hive Record

For a hive record I drive two tacks in the back of the hive and drop a V-shaped piece of galvanized iron between them. In the summer the marks are outside, and in the winter are turned in.

Small slates would be a good thing if made V-shaped.

CHAS. CHANDLER.

Garden City, Kan.

Dry in Kansas

I started with 3 colonies and haven't allowed them to swarm this season. They have produced 48 pounds of fine honey, and have big stores for winter. This has been a fearfully dry season here.

J. A. TUFTS.

Abilene, Kan., Aug. 30.

Poor Honey Crop in Kansas

We had the poorest honey crop this year that we have had in ten years. Very few colonies have sufficient stores to winter. I have 18 colonies and did not get any honey, but had to feed more or less all summer.

H. F. HILLEBRANDT.

Osborne, Kan., Sept. 20.

Afraid for Clover in Missouri

What is the general opinion in regard to white clover for next season? The very severe drouth we have had over this country, I am afraid, will kill out all of the old white clover, and if I am correct white clover grown from the seed does not produce much honey the first year.

Yesterday we had the first good rain of any consequence since the latter part of June. The corn crop here, which is the best in the State, will probably be equivalent to about ⅓ or ½ of the crop, but the fodder dried up a month too soon, and has already been cut.

The apple crop is also practically lost, as the apples did not grow to more than half their usual size, and most of them have already fallen off the trees.

Higginsville, Mo. LEAHY MFG. CO.

A Fair Crop

Notwithstanding the extreme drouth our bees have made quite a bit of honey of a very fine quality. Foul brood has not given us any trouble, for which we are very thankful.

H. O. BADER.

Browning, Ill.

Good for a Beginner

In Richland Co., Wis., the honey crop has been the best in years. White clover bloomed until Sept. 4. Right now my bees are working as lively as at any time this season (Sept. 6).

I started bee-keeping this spring, bought one good colony in a modern hive, had one prime swarm, cut four bee trees, and made one nucleus. I have now five good strong colonies with plenty of stores for winter. I united one swarm I captured with my nucleus, which made it strong. I use 8-frame hives with Hoffman self-spacing frames.

L. BERNIE SMITH.
Richland Center, Wis., Sept 6.

In Good Shape for Winter

Bees are yet storing surplus here, but soon the yield will slacken off gradually. We have been much favored here in all crops; good honey and yield. Bees, of course, are in fine order, and will go into winter strong in young bees. We know what that means with good care later.

Milledgeville, Ill. F. A. SNELL.

Too Little Rain

Our crop of honey here is very short, only one gallon to the hive, spring count. No rain from April 2 until Sept. 10.

Bunceton, Mo., Oct. 4. J. R. MARYE.

FANCY SECTIONS OF BUCKWHEAT HONEY—THE FAVORITE OF THE PENNSYLVANIANS.

Good Showing in Spite of the Drouth

I had 5 colonies this spring all in good shape. They each brought me one new swarm, then I did not let them swarm any more, but let them make section honey. I just finished taking off the last honey today, 152½ pounds. Nearly all is nice comb honey. They have plenty left for winter. They can't gather much more for it is so hot and dry that everything looks like a hay field. We have to depend upon white clover here, and the season doesn't run over four weeks, and I live in the suburbs of the city, so that isn't like out in the country.

A. A. NUNNINK.
Kansas City, Mo., Aug. 13.

Transferring—Drone Comb for Supers

In transferring bees from a plain box-hive into a movable frame hive, I take a saw and cut some strips out lengthwise of the top of the plain hive, and also pry the bottom off and place the hive on top of the movable-frame hive with full sheets of foundation wired, which I have prepared for this purpose. Then I smoke the bees down until they are nearly all down in the frame hive. I put a bee-escape between the two hives, so the bees can go down but not return. In one or two days I look through the frame hive to find the queen. If she is down below then I leave the plain hive on for about two weeks, when all the sealed brood will be hatched and down in the lower hive. Of course, the bees should be fed until they have the combs at least half built.

In the winter I leave the colonies on the summer stands, where it gets about 30 degrees below zero, and by giving them all the opportunity to fly, they winter all right. But when there is snow I always let it get a crust on top before I shovel it away, otherwise the bees would fall in the snow and be lost. By placing three sheets of newspaper on each side, between the hive body and the frame, it keeps the colonies much warmer. I also keep a sack with chaff on top of the hive in an empty super.

This summer I ordered some "drone comb foundation" for the shallow extracting frames, and I have found them to be easier uncapped even with a colder knife, and more rapidly extracted than the worker comb.

FRED DUETSCHE SR.
Charleston, Utah, Sept. 12.

Introducing Queens

The first good rain we had here since the middle of June we had on Sept. 10. We had the warmest summer this year I ever experienced. Every flower, the corn, the grass, everything was killed, but I received a fair crop of honey. Only one colony swarmed out of 22. I have mostly Italian bees, and as some beekeepers claim a good crop, I am glad to hear it. I had some colonies filling three 10-frame supers of sections. Some made only two supers. In introducing queens, I make the colony queenless for at least six days before introducing. On the fifth day, after taking out the old queen, I take out all queen cells and wait two days more and hunt up the queen cells again. If they start some again I take them out again, and four days after hang the queen in the cage between the frames, and leave her there for 24 hours, even a little longer. Then I open the candy block and let the bees eat her out.

I never had one killed that way; but the other way, as the instruction card reads, half of the queens are killed. Now, for example: I had a queen ordered a tested one. I made the colony queenless the same day I ordered the queen. As they didn't have a tested queen on hand, it took 12 days before I received her; but remember I left three queen-cells in the hive, and as soon as I received my tested queen, I took the three queen-cells out and hung the queen-cage in between two frames, and two days after I opened the cage she was most welcome.

Atchison, Kan. NICK JENTGEN.

[Your method is all right. It has the objection, however, that it leaves the colony queenless for several days. At certain seasons of the year this would not matter, while in the spring, when breeding is to be rushed as fast as possible, it would retard the progress just that much longer.—EDITOR.]

Beekeeping in Pennsylvania

Picture No. 1 shows an almost ideal location for an apiary. Situated in a young plum orchard it is sheltered on the west and north, the two bad sides, by buildings and natural windbreaks. This apiary was begun with a single colony of hybrids, and rapidly built up to a yard with 80 colonies of pure Italian bees. Wintering is uniformly successful here.

Pictures No. 2 and No. 3 show how unafraid the women are around an apiary when once they become acquainted with the work. In No. 3 the girl is possibly a little small to negotiate the supers by herself, but she is there to puff the smoke and help get the honey from the hives. J. B. HOLLOPETER.

Pentz, Pa.

Bees in British Columbia

Attached is a photograph of one of my three rows of bee-hives under fruit trees. As you can see, there are 4 colonies on each stand, which is 40x48 inches, and stands 15 inches high. In summer I spread the 4 colonies as far apart as stands will allow. I winter in the cellar, and when the bees are taken out in the spring they are set as close together as possible; a case is put over the 4 and filled with dry sawdust, which is taken off the last of May. I find this an ideal way to handle them.

I am only a beginner, but am trying to start right. In two years I increased from one colony to 105. However, I bought others which did not do so well. I am located in the far-famed Okonagan Valley of British Columbia, close to Kelowna, "The orchard city of the Okonagan," where was raised and packed the car of Jonathan apples which Mr. Van Deeman, the first judge of apples in the United States, pronounced, at Vancouver, the best car of apples ever exhibited. The bee-industry is as yet in its infancy, but like our fruit industry, it is fast coming to the front.

Rutland, B. C. D. E. McDONALD.

45,000 Pounds for Mr. Byer

We have had a bountiful crop in York county, while up in our Lovering yard, 100 miles north of here, the yield is light. Up there, owing to late frosts and severe drouth, the average will be but 45 pounds or thereabouts. That yard has now 385 colonies, and is shown in the two pictures sent to you last week. At the home apiaries, with a little less than 300, counting all that had queens, we will have about 45,000 pounds of honey; 37,000 pounds of that being No. 1 clover, and the balance buckwheat. If we had had rain for buckwheat, it would have easily been 10,000 pounds more.

Mount Joy, Ont., Sept. 17. J. L. BYER.

PSHAW! WHO'S AFRAID.

Classified Department

[Advertisements in this department will be inserted at 15 cents per line, with no discounts of any kind. Notices here cannot be less than two lines. If wanted in this department, you must say so when ordering.

BEES AND QUEENS.

PHELPS' QUEENS are hustlers.

BEES AND QUEENS from my New Jersey apiary. J. H. M. COOK,
1Atf 70 Cortland St., New York City.

FOR SALE—Choice Golden Queens that produce Golden bees equal to any.
Wm. S. Barnett, Barnett's, Virginia.

CHOICE QUEENS from June to Sept. 1 at $1.00 each; six for $5.00. Place orders now, and have them filled in rotation. 5Atf
D. J. Blocher, Pearl City, Ill.

Golden all-over Queens. Untested, $1.00. Tested, $3.00. Breeders, $5 and $10.
Robert Inghram, Sycamore, Pa.

Phelps' Queens will please you.

Queens — Improved red-clover Italians, bred for business; June 1 to Nov. 15. Untested queens, 75c; select, $1.00; tested, $1.25 each. Safe arrival and satisfaction guaranteed. 1A1y H. C. Clemons, Boyd, Ky.

For Sale—5 to 100 colonies of good Italian Bees of Doolittle strain in Danz. Hives. Will take Barnes' Power Saw in exchange, if suitable and in good shape. Edw. L. Hall, 1706 Forres Ave., St Joseph, Mich.

The Rush for Phelps' queens has been so great that we will be unable to take care of any more orders this year. We have some of the finest breeders for next year that you ever saw. Give us your orders early. C. W. Phelps & Son,
Binghamton, N. Y.

For Sale—Choice virgins, 40 cts. each; 3 for $1.00; untested, 60 cts.; tested, $1.25; breeders, $2.50, Italians or Carniolans.
Stanley & Finch, 1451 Ogden Ave., Chicago.

Special — Golden-all-over queens that produce workers of the brightest kind. 5000 mated queens was my sales last season. Untested queens each 75c; 50, $32.50; 100, $60.00. Tested, $1 25. Select-Tested, $2.00. Breeders, $5.00 and $10.00. J. T. Dunn, Queen Breeder,
6A7t Rt. 3, San Jose, Calif.

Golden Queens that produce Golden Workers of the brightest kind. I will challenge the world on my Goldens and their honey-getting qualities. Price, $1.00 each; Tested, $2.00: Breeders, $5.00 and $10.00.
2Atf J. B. Brockwell, Barnetts, Va.

HONEY AND BEESWAX

For Sale—No. 1 white comb, $3.50 per case; No. 2, $3.00, 24 sections to case; six cases to carrier; clover extracted, two 60-lb. cans to case, 9 cents. 9Atf
Quirin-the-Queen-Breeder, Bellevue, Ohio.

For Sale.—Fine, Rich, Pure White Clover Honey; also Light Amber Alfalfa. Put up in any size packages, any quantity. Write for prices.
11Atf Dadant & Sons, Hamilton, Ill.

Dealers and producers who buy honey, kindly ask for a late number of the Review, giving a list of members having honey for sale. Many carloads are listed in the October number, Address, 9Atf
The Bee-Keepers'Review, Northstar, Mich.

For Sale—Our crop of "Elite" white clover extracted honey. None better produced. Also, Raspberry extracted, blended with willow-herb, nearly as white as the clover, good body and flavor, 8c per pound. Sample of either free. Address,
E. D. Townsend & Sons, Northstar, Mich.
(Formerly at Remus.)

20,000 Pounds of Honey for sale. Buckwheat, goldenrod, aster blend, $8.40 per case. This is dark honey (golden). Clover, milkweed, raspberry blend of good body; but off a little in color and flavor, $9.00 per case. Above honey all in new 60-lb. cans and cases. 120 pound net to case. Sample upon request,
9A2t Ira D. Bartlett, East Jordan, Mich.

Pure Raspberry Honey——Was left on the hives until all sealed and ripened. The quality is very fine; none better. The raspberry honey crop was very short this year. If you want some of this delicious honey better order soon. It is put up in new 60-lb. tin cans. Price, $6.00 per can. Sample by mail, 10 cts., which may be applied on an order for honey. Elmer Hutchinson,
Pioneer, Mich.

"Null's Famous Melilotus Honey." Sample for stamp. Null Co., Demopolis, Ala.

Wanted—Comb, extracted honey, and beeswax. R. A. Burnett & Co.,
6A12t 173 S. Water St., Chicago, Ill.

Wanted—Spanish-needle honey. Our crop of Spanish-needle honey has been very short this year, and we would like prices and samples from producers of Spanish-needle honey. State quantity, price, and how packed. Dadant & Sons, Hamilton, Ill.

FOR SALE

For Sale—Empty second-hand cans, two cans to the case; good as new; 25c per case.
C. H. W. Weber,
2146 Central Ave., Cincinnati, Ohio.

For Sale—80 acre poultry and dairy farm. Good location for bees $25 per acre.
Write to P. Sorensen, Sebeka, Minn.

For Sale—Until Dec. 20, 100 second-hand 3-story L. hives with 40 combs each for $5 00. Each hive on car here.
Geo. W. Riker, Russell, Iowa.

My Entire Apiary of 175 colonies Italian bees with complete outfit for running same for comb honey; also International Harvester Auto Truck. Selling on account of sickness. J. S. Shatters, Fort Lupton, Colo.

Bee-Keeper, let us send our catalog of hives, smokers, foundation, veils, etc. They re nice and cheap. White Mfg. Co.,
4Atf Greenville, Tex.

POULTRY

For Sale — Buff Orpington eggs, pure bloods: $1.00 for 15. Satisfaction guaranteed.
2A1y W. H. Payne, Hamilton, Illinois.

HONEY LABELS

The Number of enquiries coming in for honey labels has been so large that we have decided to put in a stock of these for the convenience of our readers. Should you be in need of anything in this line, send for a copy of our label catalog, which will be sent free. American Bee Journal,
Hamilton, Ill.

SITUATIONS.

Wanted—Experienced Apiarist to help pack bees for winter, and to get ready for next season. May develop into steady work for a year or more. E. H. Bruner,
3836 North 44th Ave., Chicago, Ill.

CO-OPERATION means **buying right** and **selling right.** We are a co-operative association, and sell the best Bee-Supplies obtainable at the right prices. It will pay Western Bee-Keepers to send for our Illustrated Catalog.

Colorado Honey-Producers' Association
Denver, Colorado

Dr. Peiro will continue to give the readers of the American Bee Journal free advice regarding the subject of Surgical and Medical treatment. Many have availed themselves of this offer. Return postage is all you need to send. Address, Dr. Peiro, 4536 Perry Street, Chicago, Ill.

IF YOU are having trouble trying to live by eating by eyesight, send for my circulars and receive a slice of eating by brainsight.

C. W. DAYTON, Owensmouth, Cal.
The Ripe Honey Man

New York State Convention

The New York State Association of Beekeepers' Societies will hold its next annual meeting in Rocester, N. Y., Dec. 2 and 3, 1913. We expect to have the usual good time renewing old acquaintances and forming new ones, and learning from the advice and experience of those working in our chosen field. All those interested in beekeeping are urged to be present. You can't afford to stay away, as we often get advice free that will bring us many dollars.

Irving Kinyon, *Sec.*
Camillus, N. Y.

Statement of the Ownership, Management, Circulation, Etc.,

of the American Bee Journal, published monthly at Hamilton, Illinois, required by act of August 24, 1912.

Editor, C. P. Dadant, Hamilton, Ill.

Business Manager, M. G. Dadant, Hamilton, Ill.

Known bondholders, mortgagees and other security holders holding 1 percent or more of total amount of bonds, mortgages or other securities, None.

M. G. Dadant, Business Manager.

Sworn and subscribed before me this 2d day of October, 1913.

H. M. Cuerden,
[seal] *Notary Public.*
My commission expires Aug. 25, 1917.

Choosing the Right Present

Are you in doubt about a certain present? The Youth's Companion has proved to be one of the best that can be chosen. Perhaps you have not seen it lately, and are not quite sure. Then let us send you a sample copy or two. Suppose you ask for the issues containing the opening chapters of Arthur Stanwood Pier's fine serial story of life in a boy's school—"His Father's Son." If you look the paper over carefully, bearing in mind that there are 52 such numbers for a year's subscription of $2.00, we are sure you will say that a better present could not be chosen, whether for a young person or for an entire family.

For the year's subscription of $2.00 there is included a copy of The Companion Practical Home Calendar for 191 4and all the issues for the remaining weeks of this year, dating from the time the subscription is received.

If you ask for sample copies we will send with them the Announcement for 1914.

THE YOUTH'S COMPANION,
144 Berkely Street, Boston, Mass.

New Subscriptions Received at this Office

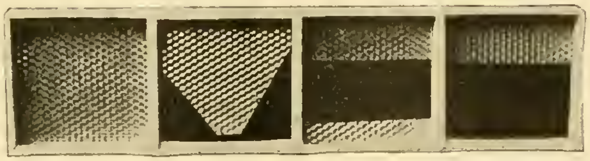
EXTRACTED HONEY

Just received car New Utah Alfalfa Honey, **9 cents** a pound f. o. b Kansas City, Mo. **C. C. CLEMONS BEE-SUPPLY CO.**
137 Grand, Kansas City, Mo.

"Falcon" Hives, Supplies and Foundation

Everything for the BEEKEEPER

"Falcon" Foundation made in the "Falcon" plant at Falconer, N. Y.



SUPPLIES FOR 1914—Take inventory of supplies now and figure what you will need for a slim season. Get them ready at odd times in the winter; and if there is a good season you will have ample time to re-order in April and get them for use. We like to make "Inventory Sales" of "**Falcon**" supplies, for we know that we are dealing with an up-to-date beekeeper.

INVESTMENT—What is the investment of an extra $25.00 in supplies to the loss of 500 pounds of honey? Resolve to change for 1914, and buy "**Falcon**" supplies now.

EARLY-ORDER DISCOUNT—For "**Falcon**" hives and supplies bought now we give an early-order cash discount equal to 12 percent per year. You see it pays for a strictly money basis. Write for early-order discounts, and send list of wants for quotation.

"FALCON" QUALITY—In making our beehives, all of our waste lumber is made into cheap toy building-blocks, so that we a able to put better material in our hives and goods. Get a trial lot this fall so that you can see for yourself, and still ha time to order 1914 supplies.

FREE SAMPLES of our famous "**Falcon**" foundation, made in our factory at Falconer, N. Y., cheerfully sent postpaid with copy of catalog, and name of nearest dealer if desired.

FACTORY W. T. FALCONER MFG. CO., - **Falconer, N. Y., U. S. A.**

Where the good bee-hives come from

HONEY CANS and PAILS

Our Friction-top Honey-cans, Slip Cover pails, Honey Shipping cans, Round and Square, are standard containers for honey.

American Can Company

Chicago New York San Francisco

With offices in all large cities

The Bee-Keepers' Review

Is the only bee journal that will have the entire write-up of the system of that Prince of bee-keepers, J. J. Wilder. This series of articles describing his system of managing 3000 colonies of bees in 50 yards, that produced 200,000 pounds of comb and extracted honey during the season of 1913, began in the July number of the Review, and it now looks as if it would continue during the entire season of 1914. Space forbids our dwelling upon the magnitude of this one man's production. Would you like to sit in your office and dictate by circular letter the management of 50 yards of bees? The series is now running in the Review, and we are printing extra copies for the last half of this year, and as long as they last we will give the last half of 1913 and **ALL** of 1914 for one dollar, the regular annual subscription price of the Review.

This is but one of the many features that will be brought out during the year 1914. Remember that only early subscribers will get the back numbers, as we have but 300 sets left. Write today with remittance to

Address, The Bee-Keepers' Review, Northstar, Mich.

We Make a Specialty of Manufacturing SECTIONS

They are the Finest in the Land—None Better.

Our Prices will make you smile. We want to mail OUR BEE-SUPPLY CATALOG to every bee-keeper in the land. It is FREE. Ask for it.

H. S. Duby, St. Anne, Ill., carries a full line of Our Goods, and sells them at our regular catalog prices.

AUG. LOTZ & CO.
Boyd, Wis.

Please mention Am. Bee Journal when writing.

Honey Jars

We carry several styles of honey jars, and would be pleased to mail you our catalog of everything a bee-keeper uses. 25-pound jar, heavy flint glass, $4.75 gross.

Heavy cartons that protect. Honey in any size package from 1 pound to a barrel.

I. J. STRINGHAM
105 Park Place, New York, N. Y.
APIARIES: Glen Cove, L. I.

W. H. Laws

Will be ready to take care of your queen orders, whether large or small, the coming season. Twenty-five years of careful breeding brings Laws' queens above the usual standard; better let us book your orders now.

Tested queens in March; untested, after April 1st. About 50 first-class breeding-queens ready at any date.

PRICES: Tested, $1.25; 5 for $5.00; Breeders, each $5.00. Address

W. H. Laws, Beeville, Texas.

Your Convenience
Is the foundation principle of the
Smith Premier Typewriter

NOT the *manufacturer's* convenience, but the buyer's convenience; not *our* convenience but YOURS.

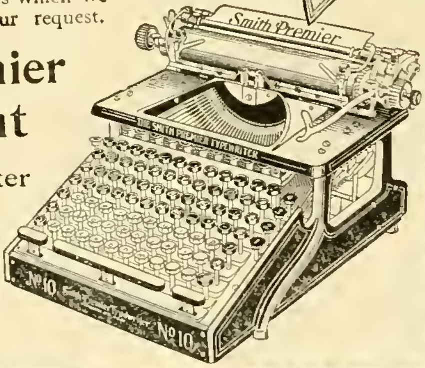
Take for example one feature—the Interchangeable Carriages and Platens. On the average typewriter there is no changing of platens and the changing of the carriage is almost a job for a mechanic. On the Smith Premier Typewriter either is as quick and simple as changing your hat. This means that the operator can get out a rush telegram or change in a second to any other work without disturbing what she has already done.

Then there is the *tilting platen*, for ease in making corrections, the *one stroke*, and one stroke only, in printing *every* character, and a dozen other special Smith Premier features. All of these mean the *convenience* of your operator—in other words more efficient service for YOU.

We have an illustrated booklet on the Smith Premier special features which we shall be glad to send on your request.

Smith Premier Department
Remington Typewriter Company
(Incorporated)

821 Pine St.
St. Louis, Mo.



BIND YOUR JOURNALS

So that you can refer to them at any time

The cut illustrates the **Big Ben Binder.** It is made of heavy cloth, and is arranged so that each number can be filed as it is received.

We have had a quantity of these made especially for our readers, with the name **American Bee Journal** in gilt on the cover. Each Binder holds the issues for three years. When bound your Journals will appear to be in genuine book form. The price of this Binder alone is $1.00. We club it together with a year's subscription to AMERICAN BEE JOURNAL, both for $1.60.

American Bee Journal, Hamilton, Illinois

Bee-Supplies
We are Western Agents for
"FALCONER"
Write for Fall Discounts—we can save you money. 1Atf
C. C. Clemons Bee-Supply Co.,
128 Grand Ave., Kansas City, Mo.

Early (FROFALCON) Queens
"ITALIANS"

Untested Queens to June 1st $1.00 each. After June 1, 90c each. Special prices in large quantities. A 5-pound bucket of Orange Blossom Honey delivered at your door by express for $1.10.

JOHN C. FROHLIGER,
1642 Milvia Street, Berkeley, Calif.
Greater San Francisco, Calif.
Falcon Bee-Supplies, etc.

Please mention Am. Bee Journal when writing.

Try My Famous Queens
From Improved Stock.

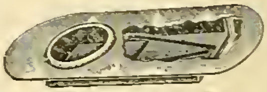
The best that money can buy; not inclined to swarm, and as for honey gatherers they have few equals.

3-Band, Golden, 5-Band and Carniolan

bred in separate yards, ready Marcb 20. Untested, one, $1; six, $5; 12, $9; 25, $17.50; 50, $34; 100, $65. Tested, one, $1.50; six, $8; 12, $15. Breeders of either strain, $5. Nuclei with untested queen, one-frame, $2.50; six one-frame, $15; two-frame $3.50; six two-frame $20.40; nuclei with tested queen, one-frame, $3.00; six one-frame, $17.40; two-frame, $4; six two-frame $23.40. Our Queens and Drones are all reared from the best select queens, which should be so with drones as well as queens. No disease of any kind in this country. Safe arrival, satisfaction, and prompt service guaranteed.

D. E. BROTHERS, Attalla, Ala.

P-O-R-T-E-R
(Trade mark.)



BEE-ESCAPE

SAVES { HONEY TIME MONEY } AT ALL DEALERS

Each, 15c; Doz., $1.65, postpaid

If your Dealer does not keep them, order from Factory, with complete instructions.

R. & E. C. PORTER, MFRS.,
Lewistown, Illinois

BEEKEEPERS' SUPPLIES

Such as Winter-cases, Sections, brood-frames of every description, Section holders, Comb Foundation, etc.
Also White Clover and Basswood Extracted Honey, in 5 and 10 pound pails.
Get my prices before placing your orders.

R. H. SCHMIDT
Rt. 3, Box 209, Sheboygan Wis.

American Bee Journal

ROOT'S POWER HONEY-EXTRACTORS

Our new catalog is full of information about these labor-saving machines. With the difficulty of getting competent help, the power extractors are being sold largely in this and foreign countries, and the present demand is far greater than ever before. Read what a California producer says in a letter to a disinterested party, which we were permitted to publish:

GENTLEMEN.—I should like to say a few words in favor of the ball-bearing Root Automatic Extractor, as I believe it is as near perfection as it can be. This machine runs so easily that a few turns to get it up to speed is all that is necessary; and the men, while using the No. 17, which I formerly had, could average only 1000 lbs. per day, while with this machine they can average 2000 lbs. with but one additional man. No apiary can afford to be without one of these machines.

I feel like congratulating The A. I. Root Co. for making an invention that is such a satisfaction, financially to the honey-producers interests.
B. B. HOGABOOM, Elk Grove, Calif.

—HERE ARE A FEW MORE—

A word about the power extractor I purchased from you through H. L. Jones, of Goodna. I found it to work very satisfactorily, and it will do all it is claimed to do and more. I use the gasoline engine for several purposes besides driving the eight-frame extractor, such as driving the washing-machine for the lady of the house, and corn cracking and grinding. I consider it one of the best speculations I made in connection with the apiary.
F. C. GOLDER, Pittsworth, Queensland.

Yours of the 16th, also the brake-band for power-extractor, came to hand. Thanks for sending it so promptly. This is my second season with the power extractor. I would not like to be without it now, even if I had only fifty colonies.
DAVID RUNNING, Grindstone City, Mich., July 10, 1910.

I received the extractor I ordered of you some time ago. It arrived in good shape. I set it up and extracted 143 quarts of honey, sold it at 35 cents a quart. The extractor is just fine—does the work completely.
F. D. KING, Athens, Ohio, Aug. 16, 1912.

The engine I got of you this spring has done fine. We ran it all fall, and never had any trouble at all.
V. V. DEXTER, North Yakima, Wash., Jan. 19, 1911

For Full Particulars See Our Catalog

The A. I. ROOT COMPANY, Medina, Ohio

BRANCH OFFICES

New York, 139-141 Franklin St.
Philadelphia, 8-10 Vine St.
St. Paul, 1024 Mississippi St.
Washington, 1100 Maryland Ave., S. W.
Chicago, 213-231 Institute Place,
Des Moines, 565 W. Seventh St.
Syracuse, 1631 Genesee St.
Mechanic Falls, Maine

A Few Agents Handling these Goods:

California	Madary's Plaining Mill, Fresno
	Madary's Supply Co., Los Angeles
Colorado	Barteldes Seed Co., Denver
Indiana	Walter S. Pouder, Indianapolis
Michigan	M. H Hunt & Son, Lansing
New Mexico	Roswell Seed Co., Roswell
Missouri	Blanke Mfg. & Supply Co., St. Louis
	John Nebel & Son Supply Co., High Hill
Ohio	S. J. Griggs Co., Toledo
	C. H. W. Weber & Co., Cincinnat
Texas	Texas Seed & Floral Co. Dallas
	Toepperwein & Mayfield Co., San Antonio

White Sweet Clover Seed

Sweet Clover is rapidly becoming one of the most useful things that can be grown on the farm. Its value as a honey-plant is well known to bee-keepers, but its worth as a forage-plant and also as an enricher of the soil is not so widely known. However, Sweet Clover is coming to the front very fast these days. Some years ago it was considered as a weed by those who knew no better. The former attitude of the enlightened farmer today is changing to a great respect for and appreciation of Sweet Clover, both as a food for stock and as a valuable fertilizer for poor and worn-out soils.

The seed should be sown either in the fall or early in the spring. 20 to 25 pounds per acre of unhulled seed is about the right quantity to sow. We can ship promptly at the following prices for the white variety:

Postpaid, one pound for 30 cents, or 2 pounds for 50 cents.

By express f. o. b. Hamilton—5 pounds for 80c; 10 pounds for $1.50; 25 pounds for $3.50; 50 pounds for $7.00; or 100 pounds for $13.00.

We can also furnish the yellow biennial seed. This variety blooms about two weeks earlier than the white which makes it preferred by some bee-keepers For the yellow seed add one cent per pound to the above prices. Seed will be shipped on receipt of order.

American Bee Journal,
Hamilton, Illinois.

Better Fruit

Published at HOOD RIVER, OREGON,

is the best, handsomest and most valuable fruit growers' paper published in the world It is handsomely illustrated and shows the Western methods which have been so successful in winning high prices.

Subscription Price $1.00 Per Year in Advance

Sample copies upon request.

Better Fruit Publishing Company
HOOD RIVER, OREGON.

ITALIAN AND CARNIOLAN —QUEENS—

for FALL DELIVERY.

The best of either RACE

Prices: 75 cts. each.

$8.00 per dozen.

GRANT ANDERSON
San Benito, Texas

HONEY AND BEESWAX

KANSAS CITY, MO., Oct. 10.—The supply of comb honey is liberal; demand fair. The supply of extracted not large, but the demand is very good We quote as follows: No. 1 white comb, 24 section cases at $3 00 to $3.10: No. 2, $2.75 to $2.90. No. 1 amber, $3 00; No. 2, $2.50 to $2 75. White extracted per pound, 8@8½c. Beeswax, per pound 25@30c.
C. C. CLEMONS PRODUCE COMPANY.

CHICAGO, Oct. 16.—The market during the past two weeks has been more active, and has nearly kept pace with the receipts, but the accumulations of the previous four weeks or more are many of them yet unsold. The white grades of comb honey range from 16@17c per pound for A No. 1 to fancy, but the majority of the receipts sell at from 15@16c per pound. The amber grades range from 1@3c per pound less. Extracted honey is also quiet, with the white grades bringing from 8@9c per pound, and the ambers from 7@8c per pound, according to kind and quality. The weather and season of the year is now favorable for the outlet of honey, and were it not for the large offerings, the quality of the crop should command even higher prices than now prevail. Beeswax is steady at from 30@32c per pound, according to color and cleanliness. R. A. BURNETT & CO.

CINCINNATI, Oct. 3.—The demand for both comb and extracted honey is not as brisk as it should be for this time of the year. We are receiving quantities of both comb and extracted honey. Fancy white clover comb honey is selling at 16c per pound. No 1 white is selling at $3.50 per case of 24 sections. Off grades do not sell. White clover extracted honey in 60-pound cans is selling from 9@9½c per pound. Amber grades are selling from 7½@8½c per pound, according to grade and quantity purchased. Beeswax is selling from $33 to $35 per hundred.

The above are our selling prices, not what we are paying. C. H. W. WEBER & CO.

CINCINNATI, Oct. 22.—The demand for honey is good. We sell fine table honey in 60-pound cans from 8@10c a pound, according to the quality and quantity. Amber honey in barrels from 5½@8c. Comb honey, the very fanciest we are getting, from $3 75 to $4 00 a case. For choice bright yellow beeswax we are paying 30c a pound delivered here. THE FRED W. MUTH CO.

INDIANAPOLIS, Oct. 22.—Honey is moving freely. Fancy white comb is selling at 16@17c; No. 1 white, one cent less Finest extracted, 9@10c in 5-gallon cans. Beeswax is in good demand, and producers are being paid 32c, cash or trade.
WALTER S. POUDER.

BOSTON, Oct. 19.—Fancy and No. 1 white comb, 16@17c per pound. New fancy white extracted in 5-gallon cans, 10@11c. Beeswax, 30c. Pure white honey in barrels, 9c per pound. BLAKE.-LEE COMPANY.

DENVER, Oct. 22.—Our local market is well supplied with honey, and our jobbing quotations are as follows: Strictly No. 1 white, per case of 24 sections, $2.70; choice, $2 57; No. 2, $2.43. Extracted, white, 8@9c; light amber, 7@7½c. We are in the market for beeswax, and pay 30c per pound in cash, and 32c in trade delivered here.
THE COLO. HONEY-PRODUCERS' ASS'N.,
Frank Rauchfuss, *Mgr.*

NEW YORK, Oct. 19.—The new crop of comb honey is now beginning to arrive quite freely; the demand is good for all grades, and we quote a fancy white at 16c, and some especially fine lots will bring 17c. No. 1 white at 14@15c; No. 2, 13c; mixed, dark, and buckheat at 11@12c per pound. Extracted is in fair demand, with sufficient supply of all grades excepting California sage. We quote white clover at 8@9½c, according to quality, light amber, 7½@8c; dark, mixed, and buckwheat, 7@8c; southern in barrels, as to quality, 70c@80c per gallon. Beeswax steady at 32c per pound. HILDRETH & SEGELKEN.

SAN FRANCISCO, Oct. 19.—Comb honey has been coming in, and the demand is very light, owing to plenty of fruit. Extracted is moving slowly. Comb honey, fancy, 14½c; No 1, 13c; light amber, 10@12c; darker grades 8@11c. Extracted, water white, 9c; light amber, 7½@8c; other grades, 5@7c. Bees wax, 30c for nice yellow; darker grades 24@26c. JOHN C. FROHLIGER.

LOS ANGELES, Oct. 15.—Since writing on June 30, quoting light amber honey at 6⅛c, we have received a good many offerings from the producers, and it is possible that the price named could be shaded an eighth of a cent per pound on firm offers.
HAMILTON & MENDERSON.

Big Money Growing Helianti, the new "wonder plant." Beats ginseng or anything else that grows. Thrives in any soil or climate. Write for full particulars. Burgess Seed & Plant Co., 3 A. B., Allegan, Mich.

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A carload of perfectly new goods is just on hand from the factory, and another car is expected any day, and the factory has booked us for four cars. This brings up our assortment so that we can now furnish almost anything listed in the catalog at once.
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The mailing of our new catalog was completed some time ago. If you are not on our mailing list send us a postal-card request for this catalog.
If you want to buy in quantities considerably larger than quoted in the catalog, give us a list of your needs and we will quote price accordingly.
If you have never tried Root quality goods, make a beginning this season. You will not be disappointed in results. Our branch is maintained for service in this line and we can give it to your entire satisfaction.
We are sole agents in Ohio for the Roller Tray Incubator and Brooder—the best in the market. Write for our catalog.

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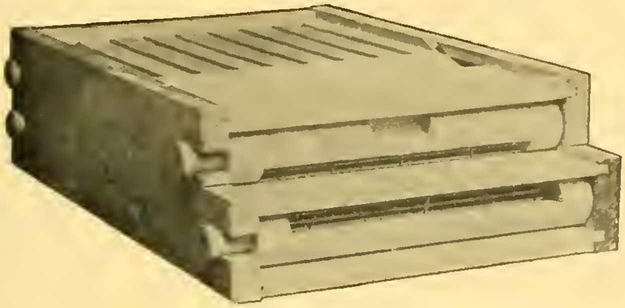

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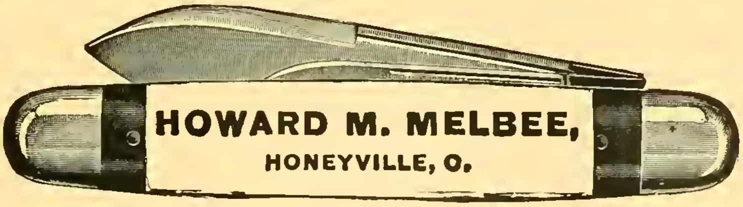

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AMERICAN BEE JOURNAL

ESTABLISHED IN 1861

OLDEST BEE PAPER IN AMERICA

PUBLISHED MONTHLY BY

American Bee Journal

1st Nat'l Bank Bldg. Hamilton, Illinois

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The music alone is worth the price of the booklet.

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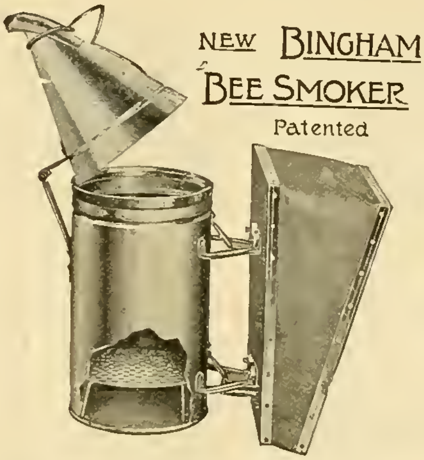

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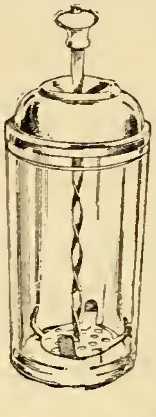

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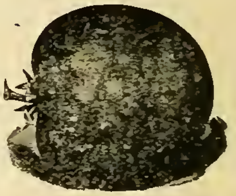

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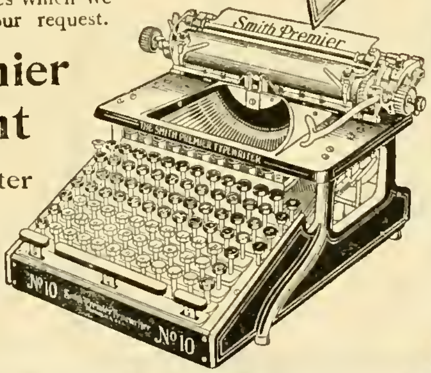

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The best that money can buy; not inclined to swarm, and as for honey gatherers they have few equals.

3-Band, Golden, 5-Band and Carniolan

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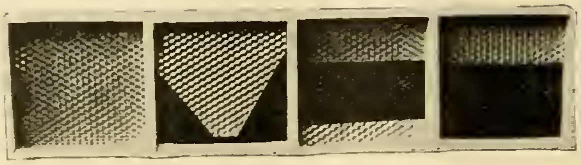

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AMERICAN BEE JOURNAL

(Entered as second-class matter at the Post-Office at Hamilton, Ill., under Act of March 3, 1879.)

Published Monthly at $1.00 a Year, by American Bee Journal, First National Bank Building

C. P. DADANT, Editor.
DR. C. C. MILLER, Associate Editor.

HAMILTON, ILL., DECEMBER, 1913

Vol. LIII.—No. 12

EDITORIAL COMMENTS

Our Frontispiece

Our frontispiece is a reduced cut of the famous Dzierzon, the discoverer of parthenogenesis, with his autograph. This was mentioned in our October number, page 344.

Wonderful Crop at Dr. Miller's

The subscribers will read with great interest the marvelous report of Dr. C. C. Miller's honey crop for 1913, given by Miss Wilson in the "Sisters' Department." This report shows what good management, careful selection, a good crop and a good location all combined can do. At 15 cents per section, or $1.80 per 12-pound case, the returns would be $39.97 per colony. In view of the fact that Dr. Miller has had to fight European foul brood, we believe this report should cheer up the discouraged ones who wonder whether it is worth while to keep bees when disease is in the land.

The Bigelow Swarming Theory

The article in the October number, by our good friend Mr. Bigelow, has brought a flood of protests, only a few of which were published. It is gratifying to see how quickly practical apiarists come to the rescue, when attempts are made to wreck some proven facts in natural history. Yet in some cases wrong theories are permitted to float a long time before they are crushed. During our trip abroad, we had quite a heated discussion with an active, practical apiarist who had propounded the idea, in print, that the Dzierzon theory was wrong, because in four different instances he had noticed drone-brood around a queen-cell. He was sure that the bees could change the sex by feeding a different food, and that they had changed the sex of those larvæ around each cell, in order to have drones to fertilize those queens when they hatched. He held to this tenaciously, and was only vanquished when his attention was called to the fact which he could not contradict, that those drones, being of the same age as the queen, would hatch so much later than she; that she would be already mated when they came out of their cell.

Another man, who was tearing down all the text-books by asserting that wax costs the bees only a pound or two of honey for each pound of wax, and that he had proven it by the financial profits which he had reaped, turned out to be a financial failure, seeking for investors.

Mr. Bigelow is good-natured, and in good faith, but he will have to give up that theory of plurality of queens in the first swarms, just as the followers of Alexander had to give up the attempt at keeping several laying queens in each colony during the season. The text-books are all right yet.

Since writing the above, we have received a letter from Mr. Bigelow, insisting on the "purpose of the drone in the natural swarm." We do not believe that it is necessary to show that nature has a purpose in inducing the drone to follow the swarm, any more than in permitting him to join any strong colony to which he is attracted, by the noise they make. Many things in nature have no plausible purpose, as, for instance, the nipples on a man's breast. But Dr. Miller sends us the following which would perhaps satisfy those who, like Mr. Bigelow, want to see a purpose in every action, in every habit of the insects:

> On the whole it would be a good thing for all beekeepers if they could have at least a little of Dr. Bigelow's enthusiastic search for reasons, even in cases where there's no money in it. Life would be broader and more worth the living. It's a sad thing for all of us when we lose the spirit of the child who pulls the watch to pieces to find what makes the wheels go 'round.
>
> In the present instance, Dr. Bigelow sees drones in a swarm, recalls nothing said about it in bee literature, and then reasons something after the following fashion: The office of drones is to mate with virgins; drones are found in a swarm; ergo, there must be virgins in the swarm.
>
> At the present day it is the practice quite generally to prevent after-swarms, so almost every swarm is a prime swarm, having a laying queen. We all know that there are virgins in after-swarms, the question is whether there are any in prime swarms. For many years it has been my practice to scrutinize closely every colony with a laying queen that by any reasonable possibility might be expected to swarm, and that about once every 10 days for about 3 months' time. The object of the scrutiny was to discover and destroy all queen-cells. If virgins go with prime swarms, I should among those thousands of cases have found at least a few cases in which vacated cells showed that virgins had emerged before the issuing of a swarm. I never found one.
>
> Another thing already mentioned by another writer. During nearly all of my bee-keeping experience I have kept my queens clipped. In spite of all my efforts to the contrary, I have had many swarms to issue. They would

issue just the same as if the queens could fly, but they would always return to the hive, or to some other hive, after flying about for a short time, possibly after remaining clustered upon a tree for a short time. I hardly need to waste words to argue that no such swarm would return if a virgin with perfect wings were present.

In my former article I said I didn't know why drones should go with a prime swarm. I didn't; but before I was through writing there occurred to me a possible reason, which I offered in a hesitating way. Having had time to think it over more fully, I am now prepared to repeat it with confidence. I believe drones a necessity for most prime swarms, and that their absence would bring disaster. Of course, drones of neighboring colonies would answer every purpose, but nature doesn't take any chances as to there being any neighboring colonies.

In the normal course of affairs every laying queen is superseded by the bees. Close observation shows that in nearly all cases preparation for this supersedure occurs after swarming; in many cases very shortly after swarming; in some cases immediately after. Now let us do a little figuring. When an egg is placed in a queen-cell a virgin emerges from the cell in about 15 days, and is ready for the drone about 5 days later; thus making 20 days from the laying of the egg to mating. A drone emerges in 24 days from the laying of the egg. I don't know how old the drone must be before he is ready for service, but if memory serves it is estimated to be when he is 10 days old. To be on the safe side let us call it 5. That makes 29 days from laying of egg to mating. When a swarm is hived and has its combs to build, it is well known that no drone-comb will be built at first, only worker-comb. So long as the queen keeps pace with the comb-builders, the bees will continue the worker-comb, and when they do begin to build drone-comb it will be to fill it with honey. Later on may come the drone-eggs, if indeed they come at all that year. It will probably be a conservative statement to say that no drone-eggs may be expected generally until 3 weeks after the hiving of the swarm. Add that 3 weeks to the 29 days we already have, and we have 50 days from the time the swarm is hived until there are drones ready for mating.

When the bees, making their preparations for swarming, consult Dame Nature as to what shall be done about the matter of drones, the old lady will say: "Well, eggs may be laid in queen-cells anywhere from 5 to 25 days after settling in the new home, and 20 days later drones will be needed for mating; in other words, they will be needed somewhere from 25 to 45 days after swarming. But they will not be ready until 50 days after that time. So you would be 5 to 25 days short if you depend upon rearing drones after being hived. That won't do. Don't take any chances. There are plenty of drones here in the hive; take 'em along, and make sure." And take 'em along they do. And that's the *why* of drones going with swarms, no matter whether they come early or late in the season. In the case of after-swarms, the matter is still simpler. A virgin that goes with the swarm must mate at once, so there's no other way but for drones to go with the swarm.

Typographical Error

On page 367, speaking of the peasants of Gascony who brimstone a part of their bees every fall, I am made to say that "each brimstoned colony brings a return of about $20." For fear that some of our readers may want to emigrate to Gascony to reap such a lucrative harvest, I hasten to say that the figure should be $2 instead of $20; that is to say, the contents of the basket hive which they call a "bournac," bring them about 4 cents per pound, more or less according to the "fatness" of the contents.

The Former Editor a Popular Man

From divers editorials published in the papers of the Northwest, it appears that our former editor-in-chief, George W. York, is a very popular man in the city of his choice, as well as in the Northwest generally. He was selected as judge of the honey exhibit of the Interstate Fair at Spokane, Wash. He was also elected secretary of the Sandpoint, Idaho, Commercial Club and of the Sandpoint Chautauqua Association for 1914.

Differences in Location

Our good, practical apiarist and friend, Mr. Wilder, has an article in this issue entitled, "Not Much Difference in Locations." We believe it is necessary to underline the fact that he is writing this from a southern State, in a part of the country where there is probably but little difference between one spot and another. But we should not take this as typical of the entire country. There are spots in the United States where bees could not make enough to live, even in isolated colonies. There are other spots where it is almost impossible to overstock the region.

In most of our northern States the most desirable locations are probably those in which pastures are numerous. The white clover is the main resource. There are other spots where a variety of plants or trees give a sufficient harvest. In alfalfa regions many more colonies may be kept to the square mile than in corn-growing regions. It is necessary to study the flora of the locality, and to have some actual experience with the honey crops to pass an opinion. Keeping bees as we have done for years, in six or eight different spots, we have discovered that crops vary much more than we thought, and some spots are constantly ahead of the others.

In most localities of our Mississippi Valley, bees may be kept profitably. But some localities will sustain 100 colonies or more, with good results, while other fields, only a few miles away, may not sustain more than 40 or 50 with as much profit. Study the conditions, and do not forget that bees *usually* do not forage farther than a mile or two away from home. The exceptions only prove the rule.

Dequeening for European Foul Brood

In the Beekeepers' Review, page 353, J. M. Buchanan, Tennessee State Inspector, says:

"In the treatment of European foul brood by requeening, Dr. Miller recommends letting the colony remain queenless for two or three weeks before introducing the new queen. Perhaps this is best, as it gives the bees more time to make a thorough job of cleaning up. I know of one apiary in which there were perhaps 50 colonies of hybrids, most of them badly affected with European foul brood. No treatment was given them except that the queens were removed and young golden Italian queens introduced at once. By the next season at least 90 percent of these colonies had cleaned up and were in a healthy condition."

In the case mentioned, where there were 90 percent of cures by the mere change of queens, it will likely be understood generally that the change to different and more resistant stock was accountable for the result. Possibly; but there is another factor that may have played no small part. When an old queen is replaced by a new one, the new one does not begin laying the very minute the old one stops laying. Indeed, it may be considered successful introduction if the new one gets to laying within three days after the dethronement of her predecessor. That break in brood-rearing is the factor meant. Until a better theory is advanced, it is the belief of the writer that the disease in a hive is *generally* perpetuated by the nurse bees feeding the young larvæ with the juices of larvæ that have just died from the disease, and that very soon after the death of such larvæ—possibly within two or three days—their juices become so offensive that they are no longer sucked by the nurses. According to that theory, if there be a break of two or three days in laying, there will be a corresponding break in the feeding, which might go a long way toward the discontinuance of the disease.

Mr. Buchanan seems to have my recommendation somewhat mixed with the Alexander treatment of European foul brood. Mr. Alexander removed the old queen, and 20 days later gave a ripe queen-cell or a virgin just hatched. In attempting to follow his plan I made the blunder of not noticing that a virgin was to be introduced, but introduced a laying queen. Afterward I changed to the plan of introducing a virgin immediately upon the removal of the old queen. I believe that is better than to wait 10 days later and introduce a laying queen, since in that 10 days of waiting the bees are in a more or less discouraged condition, while with a virgin present they are stimulated to activity in cleaning up the cells in preparation for her laying.

This plan I still think a good one in case the queen is poor. Mr. Alexander said the queen of a diseased colony was generally so poor she was not worth saving. I believe this is true where the colony is badly diseased. But in mild cases the queen does not seem to be injured to any appreciable extent. So in such cases I merely cage the queen between the combs or at the entrance for a week or ten days. Indeed I have not killed a queen in any case the past season. But no case was allowed to get bad. If a single diseased cell was found—and it is not a very difficult thing to spot a single bad cell in a whole hive—that colony was at once treated.

As the queen of any diseased colony was caged at the beginning of the harvest, two birds were killed with one stone. For that caging of the queen for ten days put out of the bees' heads any foolish notion they have had about swarming. And I had colonies so treated that went above the average in the amount of honey they yielded.

In at least one case I put all the brood in an upper story above an excluder, leaving the queen in the lower story without any brood. It worked all right. This plan has the advantage that there is little or no break in brood-rearing. It works all right for extracted honey, but does not answer well for comb honey.

So it will be seen that I do not recommend "letting the colony remain queenless for two or three weeks;" and, in fact, do not recommend letting the colony go a day without a queen in the hive, although I do stop brood-rearing for a week or ten days with the queen still in the hive. C. C. M.

MISCELLANEOUS NEWS ITEMS

California and Northern California Meetings.—The California State Beekeepers' Association will meet in annual convention in the Y. M. C. A. building in Los Angeles Dec. 9, 10, and 11.

A letter from Alvin L. Heim, secretary of the Northern Association, states that this association will meet at Sacramento Dec. 26 and 27.

Indiana to Hold Meeting.—The annual meeting of the Indiana State Beekeepers' Association will be held in the State House in Indianapolis Dec. 3. Every beekeeper is urged to attend.

G. W. WILLIAMS, *Sec.*

Report from New Zealand.—The New Zealand Farmer reports colonies exceptionally strong in brood and young bees. Drones are beginning to make their appearance in the hives. New Zealand has its spring and summer while we are having our fall and winter.

Honey Day.—December 15, has been designated as Honey Day in Indiana by the Indiana Beekeepers' Association. The day is being given publicity through the local papers in Indiana. Every one is urged to eat a little Indiana honey.

Washington State Meeting. — The Washington State Beekeepers' Association will hold their 20th annual convention at North Yakima, Wash., on Wednesday and Thursday, Jan. 7 and 8, 1914.

A good program is promised, and a surprise is in store for all who attend.

A banquet will be served on Thursday.

All beekeepers, whether members of the Association or not, are urged to attend. J. B. RUMAGE, *Sec.*

Lively Work at a Fair.—The following is an extract from a private letter from Allen Latham:

"When I got home I had to put in all my time for nearly a week getting ready for the State Fair at Hartford, Conn. There I sold nearly 1000 of my sections, and took $36 in premiums. Paul and I sold about 6000 honey sandwiches during the week. On the afternoon of the first day, Labor Day, I wish you could have seen us. Paul was kept busy slicing rolls and getting out sections.

"I simply made myself into an automatic machine, which put a slice of honey into the sliced roll, handed it out and received the money. For an hour and a half we had a line (we made them line up at the left and move down) about 15 feet long, and it did not break in all that time. I think we averaged about seven sandwiches a minute during that time. But it was hard work."

No man could compete with such work as that. But besides being a very live Yankee, Mr. Latham has had an experience of 20 years at this sort of thing, and knows the ropes thoroughly.

Exhibits at Illinois State Fair.—Visitors of the bee and honey exhibit at the Illinois State Fair, this season, state that the exhibits ranked well up to what they have been in previous years. Prizes were awarded to the following Illinois exhibitors in the order named:

A. Coppin, of Wenona.
C. Becker, of Pleasant Plains.
Jas. A. Stone, of Springfield.
W. E. Miller, of Libertyville.
E. H. Wells, of Libertyville.
Anthwine Phillips, of Dwight.

The part of the exhibit which attracted the most attention was the live bee demonstration as given by Mr. and Mrs. Coppin. Their demonstration in a cage was excellent, and never failed to draw an interested audience.

Idaho and Oregon Meeting.—The annual convention of the Southern Idaho and Eastern Oregon Beekeepers' Association will be held at Ontario, Oreg., on Dec. 9. Program is as follows:

Address of Welcome—Pres. A. I. McClanahan.
"Lessons of Past Season"—J. E. Lyon, A. T. Pennington, Chas. Nelson.
"Overstocking"—A. I. McClanahan, W. Pennington.
"Extracting Outfits, Power Driven," etc.—Benj. Paine, H. Crowther.
"Queen-Rearing"—E. F. Atwater.

DINNER.

Election of officers.
"Spring Feeding"—J. R. Marlowe, C. E. Dibble, W. W. Foster.
"Making Foundation"—M. Townsend.
Discussions.

R. D. BRADSHAW, *Sec.*

Bee Meetings.—Following is a list of the bee meetings to occur within the next few months, with date and place of meeting. Other meetings will be added as the dates reach us:

New York State Association of Beekeepers, Rochester, N. Y., Dec. 2 and 3.
Minnesota State Beekeepers' Association, Minneapolis, Minn., Dec. 3 and 4.
Eastern Illinois Association, St. Anne, Ill., Dec. 8 and 9.

Iowa State Beekeepers' Association, Des Moines, Iowa, Dec. 10, 11, and 12.

Indiana State Association, Indianapolis, Ind., Dec. 3.

California State Beekeepers' Association, Los Angeles, Calif., Dec. 9, 10, and 11.

Southern Idaho and Eastern Oregon Beekeepers' Association, Ontario, Oreg., Dec. 9.

Missouri State Beekeepers' Association, Excelsior Springs, Mo., Dec. 16 and 17.

Chicago - Northwestern Beekeepers' Association, Chicago, Dec. 17 and 18.

Northern California Association, Sacramento, Calif., Dec. 26 and 27.

Washington State Beekeepers' Association, North Yakima, Wash., Jan. 7 and 8, 1914.

Ohio State Beekeepers' Association, Columbus, Ohio, Jan. 14 and 15, 1914.

Wisconsin State Beekeepers' Association, Madison, Wis., Feb. 3 and 4.

◆

Short Course in Beekeeping.—The Ontario Agricultural College offers a two-weeks' course in bee-keeping, beginning Jan. 13 and ending Jan. 24. The following subjects will be studied: "Care and management," "Swarming," "Queen-rearing," "Diseases and treatment," Quality of honey," "Marketing," etc. The course will be under the direct supervision of Morley Pettit.

◆

Decoy Hive.—The following questions on decoy hives were asked of Dr. Bonney, and he has been kind enough to answer them through the columns of the Bee Journal:

1. Will strips of foundation do as well as "old comb for the decoy hive?"

2. Is the decoy hive worth while in a locality where wild bees are not especially plentiful?

3. Would a huckleberry pasture, with high bushes and a good growth of all kinds of trees, form too thick a growth to place a decoy hive?

4. Would it be worth while where there is a very good supply of *evergreen trees?*

5. Is there any good way to place the decoy hives so that bees will find them and people not see them?

The reason I ask some of these questions is because I know a man out in the country who keeps bees in old box-hives. Swarms get away each year. He gets little if any honey, and doesn't care as long as he is at no expense. There have been those in times past who put up boxes to catch bees not far from his farm. He took pains to find them and blow them to pieces with a gun.

I am a law-abiding citizen, and do not mean to steal from any man, but if I could get some of his "escaping swarms" they would be a great deal of help to me, instead of eventually being the prey of the bee hunter who destroys all. There is a great deal of bee hunting done here in Rhode Island, the most successful ones locating from 10 to 12 in a season.

The bee-inspector tells me that there are about 400 individuals in this State that have one colony or more. But strange to say, the great majority are still in the "old-fashioned box-hives, and bee-keeping is looked upon as a joke. I do not think there are more than 24 successful beekeepers in the whole State. GARDNER B. WILLIS.

Providence, R. I.

HOME APIARY OF I. E. PYLES, OF PUTNAM, ILL.—MR PYLES HAULS IN ALL "CRIPPLED" HIVES FROM HIS OUT-APIARIES SO THAT HE MAY REPAIR THEM AT HOME.

ANSWERS.

1. Strips of foundation would be of no use in a decoy hive. It is the smell of the old comb that would attract the bees, if anything. Personally I do not care for the comb, as my observation has been that the bees go as well into an empty box. However, they do go to a house which is full of comb and honey, and a large amount of comb may be an attraction.

2. Yes, a decoy hive is valuable where wild bees are not especially plentiful, for bees come a long distance to a box. You may know that it is pretty well established that bees send out scouts to find a new home when ready to swarm, and sometimes bees will go many miles, stopping, I suppose, on the way to take a rest. I *think* the small trunk of a tree, hollow, would make an ideal decoy hive, and would be apt to catch a swarm where bees are seldom seen.

3. No; the bees will find a home in any kind of a growth of timber.

4. I see no reason why bees should not seek a cavity in an evergreen tree, and so find a decoy hive.

5. I would make decoy hives of round boxes covered with bark, so that your farmer would have trouble to find them, I think. However, it is not necessary to go near his place to catch his bees, even if he were able to identify them, for they are apt to go 20 miles before they stop the second time. Unless he follows them and recovers them he loses all title to them. They belong to any one who hives them. Just put up your decoy hives where you know they will not be disturbed, as on the farm of a friendly farmer, your own yard, or, if in town, on top of your house, in a shade. You will catch bees in proportion to the number of hives you have out.

◆

Minnesota Meeting.—Following is a program of the Minnesota Beekeepers' meeting which is to be held in Minneapolis Dec. 3 and 4:

WEDNESDAY FORENOON.

9:00—Hour for getting acquainted and "seeing the Treasurer."

10:00—President's address.

10:30—"How My Bees Produced 30 Tons of Honey this Season"—E. L. Hofmann, of Janesville.

11:30—"Sweet Clover as a Honey Producer"—R. F. Hall, of New Auburn.

WEDNESDAY AFTERNOON.

1:30—"Carniolans *vs.* Italians"—Rev. Francis Jager, St. Bonifacius.

2:30—"The Honey-Producing Plants"—Prof, Edwin J. Freeman, of the State Farm School.

3:30—Question Box.

WEDNESDAY EVENING.

8:00—Popular Program—Rev. Francis Jager in charge.

THURSDAY FORENOON.

9:00—Wintering Bees"—Dr. L. D. Leonard, of Minneapolis.

10:00—"Why We Use Smoke on Bees"—Hamlin V. Poore, of Bird Island.

11:00—"Suggestion in Regard to Organizing a Honey Exchange"—L. F. Sampson, of Excelsior.

THURSDAY AFTERNOON.

1:30—Report on State Fair—Scott LaMont, of Park Rapids, Superintendent of Apiary Department.

2:00—Report of the Inspector of Apiaries—J. A. Holmberg, of St. Paul.

2:30—Business Session—Election of Officers.

◆

England Short of Honey.—"Honey Shortage in England" is the title of a report by Vice Consul Loop in London, writing for the Daily Consular Reports. The reason for the shortage is attributed to the prevalence of Isle of Wight disease throughout the country, which has in many instances wiped out whole apiaries. Most of the honey imported by England comes from the British West Indies with the United

States second.

In another report in the same pamphlet mention is made of the success of an Australian beekeeper in shipping his honey to England. Five tons in the first shipment brought the shipper 7 cents per pound in Sydney, Australia.

◆

Program of Iowa Meeting.—The second annual convention of the Iowa Beekeepers' Association will be held in Des Moines Dec. 10, 11, and 12. No progressive Iowa beekeeper should fail to attend this meeting if it is at all possible for him to do so. The Secretary is pleased to be able to submit a *rousing* program as follows:

WEDNESDAY, DECEMBER 10.

10:00. A. M.—Address of the President—Frank C. Pellett, of Atlantic.

Report of Secretary—S. W. Snyder, of Center Point.

Report of Treasurer—C. H. True, of Edgewood.

Reports of Standing Committee.

Appointment of Committees.

1:00 P. M.—"Some Side Lines on the Farm"—J. W. Jarnagin, of Des Moines.

"Marketing the Crop"—W. P. Southworth, of Sioux City.

"Beekeeping as a Business"—B. A. Aldrich, of Smithland.

"Selling Direct to the Consumer"—J. L. Strong, of Clarinda.

Ladies' informal meeting in separate room in charge of Miss Nina Secor, of Forest City.

8:00 P. M.—"Beekeeping in Europe"—C. P. Dadant, of Hamilton, Ill.

THURSDAY, DECEMBER 11.

9:00 P. M.—Election of officers.

"Arrangement of Apiary"—C. H. True, of Edgewood.

"Sweet Clover—What It Will Do for the Farmers and Beekeepers of Iowa"—Frank Coverdale, of Delmar.

1:00 P. M.—"Beekeeeping as a Side Line and the Fun of the Thing"—Hamlin B. Miller, of Marshalltown.

"Modern Methods of Caring for Extracted Honey"—E. R. Root, of Medina, Ohio.

8:00 P. M.—"How May We Increase the Consumption of Honey?"—Eugene Secor, of Forest City.

"Increase"—J. W. Bittenbender, of Knoxville.

"Advertising"—Dr. A. F. Bonney, of Buck Grove.

"Comb or Extracted Honey?"—C. L. Pinney, of LeMars.

FRIDAY, DECEMBER 12.

9:00 A. M.—"Beekeepers' Legal Status"—Russell E. Ostrus, Attorney for Iowa Beekeepers' Association, of Des Moines.

"Treatment of Disease"—Edward G. Brown, of Sergeant Bluff.

"Helps and Hindrances in Dealing with Foul Brood"—J. W. Stine, of Salem.

1:00 P. M.—Address, Prof. W. J. Kennedy, of Ames.

"A Season's Work"—F. W. Hall, of Colo.

Exhibits—R H. Longworth, of Polk City.

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Chicago-Northwestern Meeting.—The meeting of the Chicago-Northwestern Beekeepers' Association will be held at Chicago on Dec. 17 and 18 at the Great Northern Hotel, Room L, 36.

The Secretary has arranged a program with papers by several of the leading beekeepers. As this has been a good year, beekeepers should make every effort to attend. Chicago is centrally located, and we should have a good attendance from Wisconsin, Michigan, Indiana, Minnesota and Illinois.

A cordial invitation is extended to every one. If you do not receive a card asking you to attend, this notice will be an invitation.

L. C. DADANT, *Sec.*

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League Fund Exhausted.—In September I advertised in all the bee-papers published in the United States and Canada that I would send Honey Booklets to all who sent postage. Soon I was flooded with letters from all over the States and Canada, and several foreign countries, including postage for various sizes of packages. As fast as I received them, I booked every order and began sending them until my 5000 books were gone. I then got another lot, and they were soon gone. I then had to wait for 30,000 more to be printed, and they were delayed two weeks by freight. Over 600 orders for the books came during this delay, some asking for 100 copies, and many wanting more.

The League Fund has been exhausted in printing, postage, drayage, freight and help. I have 245 orders that I cannot supply, and just a sample copy I can send with return postage to each. I am sorry that I cannot supply all orders—and more are coming daily. Certainly the thousands of books I have sent, if placed in the hands of good cooks, will create a great demand for more honey.

I bought these books of the A. I. Root Company, of Medina, Ohio, and I believe you can buy them for $4.50 per 100 copies. With these orders were reports for 1913, and generally beekeepers were selling most of their honey in home markets. Comb honey at 15 to 23 cents. Extracted at 8 to 10 cents.

I wish you success in wintering your bees, and hope that 1914 may be your best season. N. E. FRANCE.

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Missouri State Meeting.—The annual meeting of the Missouri State Beekeepers' Association will be held Dec. 16 and 17, at Excelsior Springs, Mo. The program follows:

FIRST DAY, 2:30 P. M.

Appointment of committees and report of Secretary.

Address of President.

8:00 P. M.

Paper—"Beekeeping as a Business"—R. A. Holekamp, of St. Louis.

Address—"The Good Bees Do for Humanity"—Dr. A. D. Wolfe, of Parkville.

Paper—"Beekeeping in Italy and France"--C. P. Dadant, of Hamilton, Ill.

Speech—"Wit and Humor of the Bee and the Beekeeper"—J. T. Martin, of Liberty.

SECOND DAY—9:00. A. M.

Paper—"Beekeeping in South Missouri and Northern Minnesota"—H. F. Strang, of Cleo.

Address—"How to Avoid Getting into Trouble with Your Neighbor on Account of Your Bees"—M. E. Darby, of Springfield.

Address—"How to Beat 'Em if You Do"—A. T. Rodman, of Kansas City.

Papers—"Rearing Good Queens"—E. E. Lawrence, of Doniphan, and L. E. Altwein, of St. Joseph.

Address—"Mistakes of an Old Beginner" Clay Foley, of Missouri City.

Paper—"The Best Way to Increase"—H. C. Gadberry, of Miami.

1:30 P. M.

Address—"A Commission Merchant's Experience in Handling Honey"—C. C. Clemons, of Kansas City.

Address—"Experiences of a Supply Dealer"—C. E. Walker, of Kansas City.

Address—"How to Get a Good Foul Brood Law"—J. W. Rouse, of Mexico

Paper—"History of the Missouri State Beekeepers' Association"—W. T. Carey, of Wakenda.

J. F. DIEMER, *Sec.*

BEE-KEEPING FOR WOMEN

Conducted by MISS EMMA M. WILSON, Marengo, Ill.

Season at Marengo—The Best Ever

At the opening of the season there were in Dr. Miller's apiary 83 colonies. Of these, 72 were devoted to the production of section honey, leaving 11 for extracting combs. These 11 were mostly the poorer ones. May 12, 2 new colonies were made, and others later on, the season closing with 101 colonies. One of the colonies made May 12, worked sections, making 73, but 72 was the spring count of the comb-honey colonies.

With one or two exceptions the 72 were strong and in fine condition in spite of the presence of some European foul brood. May 6, there were 57 colonies having more than 4 frames of brood each, which we count fine for this locality. May 1, the bees had more than they could do on fruit bloom and dandelions. May 27, fruit bloom was over, and just at that time appeared the first blossoms on white and alsike clovers. May 29, we gave the first supers. We had in advance 660 supers filled with sections, ready to put on the hives.

White clover was so promising that it was suggested to Dr. Miller that more sections might be needed. He scouted the idea. He said, "There is no need of more than 7 supers per colony, spring count. Allowing one empty super to each colony at the close of the season, that leaves an average of 6 supers to be filled by each colony, making 144 sections. We have 660 supers ready, or a little more than 9 supers per colony. We never had anything like that, and never will have. No matter how hard the bees are working now, there are always setbacks, as you will see, then there will be empty supers to burn at the close of the season."

June 19 the first super was finished, and June 24 we began taking off. But we put on more than we took off, so that there were 260 supers on the hives June 25; 291, June 27; 317, June 30; and still more afterward. In the meantime, importunities continuing, Dr. Miller ordered 5000 more sections. He said: "I am not ordering these on my own judgment; we don't need them; but my peace of mind is worth something, and it will not be a very expensive matter to have 5000 sections lie idle until next year.

But the bees must have had an inkling that a fresh lot of sections was on hand, for they seemed to put in honey harder than ever, and by July 30, the last of the 660 supers were on the hives, and 15 supers more out of the last 5000. On the same date Dr. Miller ordered another 5000, not needing any great urging thereto. He had lost all confidence in precedents, and didn't know what to expect.

July 8, there had been 367 supers on the hives, and for some time after that date the number changed but little, because about as many empty supers were put on each round as the number of full ones taken off. The long, even flow is somewhat indicated by the number of supers on the hives: July 8, 367; July 30, 368; Aug. 18, 314. July 30, there were 2 hives having on them 3 supers each; 20 with 4 supers; 31 with 5 supers; 15 with 6 supers; 3 with 7 supers; 2 with 8 supers; averaging a trifle more than 5 supers each. When one looked at those supers piled up on the hives, one could not help wondering what difference it would have made on the crop if each colony had been restricted to 2 supers at a time according to the practice of some.

About the middle of August white clover seemed to be letting up, although it was hard to tell very much about it. There was no cessation of flow, but a seemingly gradual change from white clover to sweet clover and heartsease, the latter almost as white as white clover, although generally considered amber.

September 22, we took off all supers, putting back over a few hives some sections that were filled but not quite sealed, and putting over these a lot of sections partly filled but not sealed. It was a fizzle. The bees didn't take our view of the matter, and emptied the honey out of the unsealed cells that we expected them to finish.

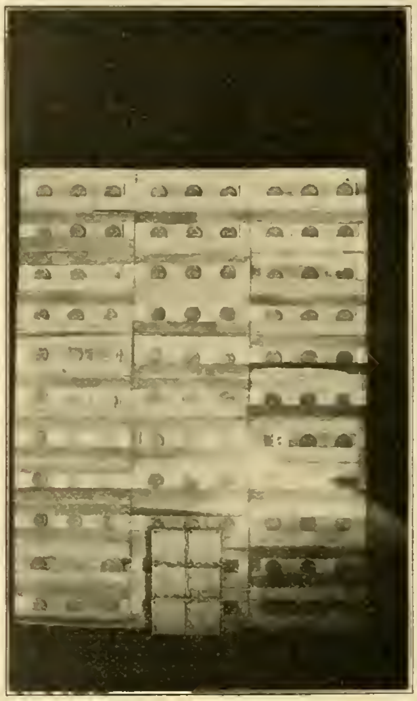
The weather throughout the season seemed to be made especially for the bees, It was not too dry; it was not too wet. When it rained it was generally in the night, clearing off in time for the bees to begin work in the morning. Up to Sept. 20, there were only two days (wet) when the bees showed an inclination to rob. When we took off supers, we could let them stand open on top of the hives all day. September 6 some scraps of honey were placed over the bees' watering-pail for them to clean up. It stayed there all day untouched. A few bees visited the pail, but they didn't want honey; they wanted water. The honey was then placed in front of a hive, and it was more than a day before it was cleaned up.

Careful account was kept of the honey taken, and each colony received the proper credit. During most of the season the crediting was an easy matter. No super was taken until it was full, and so 24 sections were credited. Often, however, two full supers were taken at a time, sometimes three, and in a very few cases four. But toward the last of the season the crediting was not so easy, when some sections in a super were filled and others partly or entirely empty. If a super had credit for 15 sections, that doesn't mean that 15 sections were entirely filled, but that all the honey in the super would be enough to fill 15 sections.

When everything was footed up at the close of the season, quite a variation was found in the yield of different colonies—a thing not by any means to be proud of. Number 39, which was queenless a long time, and exceptionally vicious about accepting a queen, gave 68 sections. (That's 68 *sections*, not pounds, the account being kept altogether in sections throughout, the average section weighing somewhere around 14½ ounces.) Next to this came a colony with 112 sections, and from that it rose by degrees to 198 sections, there being just 10 colonies in all that gave less than 200 sections each. Then came 23 colonies yielding between 200 and 250 each. Then 19 between 250 and 300, and 15 from 300 to 360. The last and best 6 colonies gave respectively the following numbers: 383, 384, 384, 390, 395, 402. The average for 72 colonies, spring count, was 266.47 sections each, the total being 19,186 sections. (How much extracted there will be is unknown at the time of this writing, as it is yet in the comb. But that is a separate affair.)

In all the years previous to this, the largest number of sections from a single colony was 300, and there was but a single instance of that kind. This year there were 20 colonies that beat that, one of them beating it by 34 per-cent.

Why did we do well? Perhaps the largest factor in the case was the phenomenal season. Added to this were bees improved by constant selection for best gatherers; surplus room was always in abundance; and we gave the



From No. 4 were Taken 402 Sections, Filling 33 12-Section Shipping-Cases and Leaving 6 Sections Over.

Some of Dr. Miller's Hives When the Crop was On.

very best care and management we knew how to give.

Will we ever do as well again? Very unlikely; but who knows?

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Half-Acre Opportunities

I believe in "half-acre opportunities for women," and will give my experience with bees.

Twenty-four colonies, fall count, have produced 2800 sections of comb honey, an average of 116 sections per colony; the highest is 288 sections from one colony. This colony filled one super in three days. This is all white alfalfa comb honey, as supers were not put on until June 14. The flow lasted until about the middle of September.

I use the 8-frame Langstroth hives, changing the old hive to a new place, and putting the swarm on the old stand. Twelve colonies in 1912 averaged 100 sections. This is all sold, and I am unable to supply the demand.

(Mrs.) L. V. Melvin.

Caputa, S. Dak.

Thanks for your report. If you can have an average like that every year, or even half as much, it would rather look as if you had full acre opportunities.

Dr. Miller's Apiary at the Close of the Harvest.

FAR WESTERN BEE-KEEPING

Conducted by Wesley Foster, Boulder, Colo.

The Rising Sweet Clover Tide

The value of sweet clover as a forage crop is rapidly being recognized. The Sept. 20 issue of The Country Gentleman contains a well-written article which says that sweet clover is destined to become a rival of alfalfa in many soils, and in some soils is superior to alfalfa.

The writer says: "Sweet clover has proved of real service in worn-out upland farms, for it is a soil renovator as well as a flesh former, a milk maker and a money maker. It will thrive where even weeds will not grow. It prospers on the best soil, and will produce abundantly on barren wastes. It is the greatest drouth resister of all forage plants; its roots penetrate the hardest ground, even taking hold in crevasses in rocks.

Sweet clover is destined to be one of the greatest crops on the dry lands of eastern Colorado and western Nebraska and Kansas. It has long been a question whether these dry lands would ever be fit for anything but cattle ranges; but farming methods and special forage crops, sweet clover included, are being adapted to the special conditions. Prof. P. G. Holden, who is with the extension service of the Rock Island system, has just completed a trip through eastern Colorado. He advocated the growing of sweet clover on the dry land. He also made strong pleas for silos, and more of them.

At a recent luncheon given by the Denver Real Estate Exchange, among the speakers were Mr. R. A. Pence, who said in part: "The growing of sweet clover for cattle feeding purposes has become a flourishing industry in the dry land communities in recent years. On the Kubanker ranch, 40 miles east of Denver, and 7 miles from Strasburg, there is a splendid example of sweet-clover feeding to cattle."

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Prospects for Next Year

A more propitious fall could not have been designed to help the bee men. We have had a long warm season with very late frost. Alfalfa and sweet clover have made a fine fall growth, and both should winter in the best condition, as we have had ample rains. The soil is moist, and sweet clover is still green close to the ground.

The seeding of sweet clover was very heavy, and the spread of it in waste places has been going rapidly on. Next year should see a large growth of this plant.

The frequent rains have doubtless been very destructive to grasshopper eggs, so we hope and expect to be bothered with this pest very little next season.

While the honey crop in Colorado has been larger than in a number of years past, the severe drouth in the States east of us has created a market for Colorado honey, as well as other produce. Nebraska, Kansas and Oklahoma are taking large quantities of honey this year.

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Poor Wintering of Colonies Affected With American Foul Brood

It has been a common experience among those who have tried to winter foul-brood colonies, that they do not winter well, especially if there is much diseased brood in the hive. I have seen very strong colonies, with a few foul cells, go into winter quarters and perish before Christmas. Other colonies would enter the winter well, but would die off rapidly before the coming of settled cold weather. There are two reasons that very largely affect the result:

First, is the lack of a large proportion of young bees, the late broods mostly dying from the infection.

Second, and I think the most important reason, is that a foul-brood colony does not cluster upon its combs and form a compact brood-nest. The bees are found more scattered through the hive. They are disinclined to bunch up in a compact ball. Perhaps it is the odor of the decaying brood that is offensive to the bees.

It is a wise rule to winter no foul-brood colonies unless only a half-dozen diseased cells are found.

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County Agriculturist Wanted

For a number of years the chief agricultural and horticultural counties of Colorado have had horticultural inspectors and also apiary inspectors. The County Agriculturist movement is now sweeping over the country. This is a strong proof that the people, as a whole, are realizing that agriculture is the basis of national prosperity. Why create another county officer on county pay? Why not combine the office of county apiary, horticultural inspector and agriculturist in one individual? The county agriculturist must be a versatile individual, but he can lend a great deal of aid to all classes of producers if he is the right man.

So bee men among our younger readers who are ambitious for some such position, prepare yourselves at some Agricultural College. A County Agriculturist must be a good organizer and have the confidence of the farmers. It is not required of him that he be an expert along special lines unless agricultural enterprise is greatly specialized in the county where he is to work. But if he does not know all lines he must know where to get experts for specialty work.

Moving Pictures

I am a kodak and camera enthusiast. To take pictures is my delight. A clump of trees, a lane, some grassy plots, fields with cattle grazing, and the mountains in the background; these are things I like to arrange pleasingly on my film. And often it takes long searching to find the right spot where a *real picture* can be had.

I also enjoy looking at pictures. It would be hard to say how much of my education has come from them, but I dare say more has come that way than in the four years spent in high school.

Several dollars each year, and many hours, are spent looking at the movies—I've seen billions of them without doubt. I will not apologize for their shortcomings—the National Board of Censorship can do that.

Every new *rage*, as Mr. Scholl calls this one, has its critics, and they need them. The worst thing about the movies is the commercialism of the thing; the race for the nickels in Denver; the dimes in Boulder; the quarters in Telluride; and in Reno, I suppose they charge you a dollar to see the movies.

I object, however, to paying my good nickel, dime or quarter to see a dyspeptic husband abuse his good wife's cooking, throwing dish after dish on floor, and almost breaking up the home before the film is run through. Everything comes out sweet in the home (wrong with me) when the wife discovers that "Buncombe" brand products are all that is needed to make her cooking faultless. Perhaps "Buncombe" products have saved many a home from dissolution, but I don't want to pay to be told so in a moving picture. And I would just as strongly resent it if I were told in a picture (after paying my dime) that honey was the only sweet fit to enter a human stomach.

People will be entertained and instructed if they are shown in moving pictures the life and work of the bee, and how honey is produced and prepared for market, but don't make any special plea—it will defeat its own end.

The Front Colony Filled 224 Sections this Season. It Belongs to H. F. Edsall, of Hammonton, N. J.

BEE-KEEPING IN DIXIE

Conducted by J. J. Wilder, Cordele, Ga.

Pleasant Emotions

I hope no one will think any the less of me if I express myself on my situation as a beekeeper from a business standpoint.

I am experiencing a general good feeling over business affairs, and the result is that my ambition is several notches higher than it ever has been. Things are going at a higher pitch for the approaching season.

It was about the middle of October when I made my last round for the season to my Suwanee river apiaries. The general manager and foreman, with all the hands, met me with smiles and glad hearts, and each one gave me a hearty hand shake. In every way they could they showed me kindness and love. When I reached their homes I found that they had made great preparations for me, especially in the way of something to eat. In every particular my stay among them was a feast and a joyous occasion. One young man, who has been with us but one season, and who was recently married, said: "Mr. Wilder, I want to stay with you in the bee-business as long as I live." We got together and had a convention such as I never experienced before.

Practically all the season's work was covered in conversation, in questions and answers, each one telling the most serious problems that had come up during the season, and how he solved them; and if such problems come up in the future he could solve them in a better way, etc. The result was that we were all made wiser. When we talked of the future side of business, they all wanted to make a big increase next season, and those who did not have 600 or 700 colonies in their care, wanted to reach that number as quickly as possible. Some of them wanted to run as many as 1000 colonies, and to this end they are now making preparations.

Their orders for the necessary supplies are placed, and some of them are large ones, too, consisting of over a half carload of goods. Our little beehive plant has been running full time for over three months, that we might keep up with orders and give them the supplies so they can have them set up in ample time for next season. The business situation looks better and brighter than ever before.

Not Much Difference in Locations

The more I learn about the honeyflora, or the amount of honey secured in different locations all over our country, the more I am convinced that there is not much difference in locality as regards the amount of honey secured. If beekeepers would recognize this they would be more content. There are too many discontented and restless beekeepers wanting to move here or yonder to better locations, where they can keep more bees and produce more honey per colony; hunting or desiring to hunt "the good spot" for the business when they are already located in as good a spot as there is.

I know a good beekeeper who for years was not pleased with his present location, and said that it was the poorest one in the world. He made great efforts to get out to some "better place," but finally finding that he could not make a change, "he took off his coat and rolled up his sleeves" and resolved to make the best of the situation. And so he did, scattering apiaries about over the country. Today he is doing well, making money every season, and says that he is perfectly contented, and has as good a location as he could find.

I know a number of old apiary sites from which the bees were moved years ago, as the beekeepers said they were in poor locations. Since then other beekeepers have come into the same sections and located apiaries on the same old sites, and they are doing well. I dare say that it is a fact in nearly every case where a beekeeper wants to move to some good spot, that the difference in the net returns from his bees, located there for years, would not pay

T. C. Nall Giving the Boys their First Lesson ie Beekeeping
"Ten years ago I bought a little fruit farm here in Chester, Ark. In the deal I got a few colonies of bees in old "log gums." As I could do nothing with them in the logs, I made some hives, the first I ever saw the inside of. I now have 300 colonies in five yards. It makes going easy for me."

T. C. Nall Getting His Pay for Teaching Beekeeping

moving expenses.

Many times these good spots do not prove to be so. I know of cases where apiaries were moved for miles across the country in cars and located where great crops of honey were reported nearly every year. In many instances the result was a miserable failure, the good beekeeper became discouraged, let his bees go to nothing, and quit the business. This is too often the case, and beekeepers should know what they are doing when they make the change. You know the conditions existing in your present location, and you are not apt to know them elsewhere.

A Suggestion

There is a great number of beekeepers scattered over our country who have acquired enough knowledge of our business to write intelligently about it. I want to suggest that we write something that will interest and instruct the public along the line of our business, and send such articles to the editors of our county and State papers. They will be glad to give such articles space. This will go a long ways towards educating the people in two things; the consumption of our product and the building up of our industry. Photographs of apiaries or of beework could be used with good articles. Only a few years ago I knew a man who started writing in this way, and today he has a good job as an editor.

The Winter Problem

During the winter months there is always more or less uneasiness among beekeepers as to whether bees are wintering well. Especially is this true of beginners, or those who do not know the condition of their bees, or the amount of stores they consume. To these I want to say that bees do not consume much stores the first part of winter, but the latter part and in early spring they consume much more because they are rearing young bees in great numbers. It will be time enough then to examine them and see how they have wintered and are progressing.

There are many beekeepers who remove but little honey during the season, for fear that their bees will perish during winter. This is a mistake. The honey in the supers should be removed; for, as a rule, they have plenty of stores in the brood-chamber or bottom story to tide them over winter and until the honey-flow or stores are equalized at the approach of spring.

In the South this surplus honey can be removed any time during the winter, the supers removed, cleaned, and made ready for next season. If the supers are filled with fall honey, or honey that will quickly granulate, it would be better to remove it as it is sold, or it can be left on the hives and removed early next spring, or as soon as settled warm weather comes.

Home Apiary of Mr. J. K. Isbell, of Wewahitchka, Fla.

This apiary is located on the banks of the Chipola river in West Florida, where beekeeping is the principal industry. It is one of the best kept yards in the entire South. He has two similar yards with 250 colonies in each, and he devotes his entire time to bees, hiring help when his crop of honey is to be removed. Mr. Isbell removes the frames of honey as fast as they are completed or capped; therefore, he does not have to have so much storing room. His apiary consists of 2-story

Apiary of J. K. Isbell.

hives, one story for the brood-chamber, and the other for surplus. He runs entirely for extracted honey, which, he says, pays best.

Mr. Isbell believes in shading the hives well, either artificially or naturally, and has a large alighting-board for the tired, heavy-laden bees. He keeps a record of each queen, and requeens each colony every two years.

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Get Ready for a Bumper Honey Crop Next Season

It is none too soon to get supplies for next season's use, and set them up so as to have them in perfect readiness by the time they are needed. If reports are true, all bees are heavy with stores, owing to a good, late honey-flow lasting until frost, and as a rule bees are stronger than usual. This means that we will undoubtedly have a bumper honey crop next season.

As a general thing beekeepers do not order enough supplies for the approaching season; not enough hives for increase or for swarms, thinking, perhaps, that the bees will not swarm, or something will happen that they will not need them. This is a great mistake, for it is always best to have a few hives left over, and not run the risk of losing swarms for lack of hives. Another deplorable fact is that there is rarely enough storing room in the supers provided, and the result is that much honey is lost.

I know this to be the case since visiting beekeepers over the country. They usually buy 1½-story hives, having but one super per colony when they should have not less than three. Some colonies will not need so many, but others will need more, and this amount is small enough even for seasons when our honey-flow is not heavy.

A Swarm! I Can't Ring a Bell. What Must I Do?

CONVENTION PROCEEDINGS

Synopsis of Illinois State Meeting

On the morning of Nov. 5 the Illinois State Beekeepers' Association met at the State House in Springfield. All the officers were present.

The resolution passed by the association in 1912, asking the Board of Trustees of the University of Illinois to establish a bee department and experimental station at the University had not been acted upon at this date. President E. J. Baxter, however, who had called upon the President of the University and the head of the Bureau of Entomology, reported that a bee department was favored, and as soon as the matter could be properly taken up it would be favorably considered. The State Entomologist, however, said he would not wish to take up the inspection work of brood diseases in the State, as it is in good hands at this time.

The report of Foul Brood Inspector, Mr. A. L. Kildow, showed that there was about 50 percent increase in the number of colonies of bees in the State, and foul brood diseases were being checked, and in many places entirely eradicated. European foul brood in the eastern part of the State is not yet under control, but that section is to be thoroughly inspected before another year passes. The inspection work was handicapped the latter part of the season on account of lack of funds. The State treasury being empty, the Foul Brood Inspector was notified not to spend any more than was absolutely necessary the latter part of the summer. All the funds, however, will be available early next spring, and a great deal should be accomplished.

Through the efforts of Pres. Baxter, Sec. Stone, and Senator Compton, the appropriation for foul brood inspection was increased by the Legislature at its last session from $1500 to $2000. The State Legislature realizes that the beekeeping industry is an important one.

The program was to consist partly of competitive papers for which four prizes were offered, but only one paper was presented and read. This was by Jas. Poindexter, of Bloomington, and a good discussion followed it.

Action was taken to get one or more prominent beekeepers and speakers from outside the State to make up a strong program for next season. If possible to secure him the principal speaker will be Mr. N. E. France, of Wisconsin, whose value as a practical beekeeper was greatly enjoyed at the 1912 convention.

A photograph was taken during the morning session, but only some 20 members of the 30 or more in attendance were present.

The secretary of the Eastern Illinois Beekeepers' Association, Mr. H. S. Duby, asked that their proceedings be printed as part of the Illinois State Report, and he also asked for assistance from the Illinois State Association in the way of paying expenses of one or more prominent beekeepers to attend their convention in eastern Illinois. No action was taken on these matters. More organizations of beekeepers in Illinois ought to exist with field days. Instructions, especially on brood diseases, should be given out freely. In some sections of the State beekeepers do not recognize the good intention and value of the work of the inspector.

The question box furnished a large part of the program, and many live questions were threshed out. Conclusions on outdoor wintering were: Good protection from intense cold and cold winds; sufficient ventilation without draft to the bee cluster, and absorbent material directly above the cluster. Any method of packing used just above the cluster, forming a strictly sealed covering was condemned.

The question of the National Association, as presently managed, was brought up, and with but few exceptions the members were pleased with both the advantages the National Association offered and the Beekeepers' Review. The work formerly done for the National by N. E. France, as Manager, was warmly commended.

Getting reports of the United States honey crop through the Bureau of Statistics was discussed. The Department of Agriculture has sent out letters asking for suggestions on this matter. A thorough and reliable report of the honey crop, such as there is now made of the grain crop, would be of great benefit. Steps were taken to ask that the Department of Agriculture get the information necessary to facilitate them in making an intelligent canvass and report.

The matter of placing bees on the tax list is quite important. At present bees are taxed as miscellaneous property, and no doubt many colonies are not assessed. It will give more prominence to our industry, and make it easier for the beekeepers of Illinois to get the appropriations and other favors which they may need and ask of the Legislature.

The election of officers placed the

same men in the chairs of President, Secretary and Treasurer; and Mr. Aaron Coppin, of Wenona, was made 1st Vice-President. Mr. W. B. Moore was elected delegate to the National convention.

NOTES FROM ABROAD

Notes from Abroad

BY C. P. DADANT.

WELL, dear reader, I am again writing from my desk at home, after four months of travel. The 50th anniversary of my first arrival from Europe, when a child, almost coincided with my return home, for I landed in Hamilton, Ill., on the 19th of October, 1863, and my wife and I landed in New York from our long trip on the 18th of October last. Fifty years of residence in a country ought to give one a fairly good idea of the country. I am glad to say that we returned to America with the greatest satisfaction, and with the feeling that it is the best country of all, even though it is behind Europe in many things. Mrs. Dadant, of course, being born here, did not hold a different view from mine.

In glancing over the letters written to the Bee Journal from abroad, I see that I can confirm what I have already written about the Italian bees. All along our route, the verdict was the same. The Italian bees are more active than the common bees; they rise earlier, stay out later, are fully as prolific, if not more, and prove better wherever the climate permits them to follow their inclination. But there are spots, and some parts of Switzerland are of that kind, where the very activity of the Italian bees is to their detriment.

I cannot do better than to give here a comparison which I have expressed to a number of beekeepers, and which illustrates the conditions they face in some cases and the results. Even though this illustration is taken from the vegetable world instead of the animal kingdom, the reader will plainly see the point.

When I built the house in which I now live, here at Hamilton, I planned to plant a number of hard maples, or sugar maples (acer saccharum), in the front yard. These, I thought, I could secure from the woods around, since the sugar maple grows naturally here. But I could get only 6 good trees, and I needed 21. So I asked a nurseryman to supply me with the extra 15. These were shipped from Wisconsin. As Wisconsin is 2 degrees or more farther north than we are here, I felt quite sure that the trees from that State would be fully as hardy as the local trees, and would thrive. But the result was exactly the reverse of what I thought. As soon as a few warm days come, in early spring, the Wisconsin trees evidently take it for granted that the winter is over, and they send forth leaves and stems. After a few days a frost comes that wilts all this growth, and the trees are set back to such an extent that they can make but little growth. The home-grown trees, however, are so acclimated that they do not trust the first warm days, do not hasten to send forth their growth, and when they do grow, all danger of frost is over. So the trees from the colder country are worse off than the others because they trust an unknown climate.

I believe that where the Italian bees fail, it is for a similar reason. They are accustomed to the climate of Italy, and their instinct prompts them to go out at the first ray of sunshine. But in some parts of Switzerland, as I pointed out in my October letter, the bees that venture out on doubtful sunny days are often unable to return. The very activity of the Italian bees thus turns against them. Similarly, when a warm spell during the latter part of summer induces them to breed, they spend too much in rearing brood, while the local bees mistrust the short fair weather and practice economy. The climate of the Mississippi valley is certainly more similar to that of Italy than to that of the cool valleys of Switzerland. So the Italian bees are suitable for our climate, and we may still be sure that they are preferable to the common bees, or even to those of Switzerland.

I heard very favorable comments concerning the Carniolans and the Caucasians. But the universal verdict was that the Carniolans are very great swarmers. Perhaps this habit could be bred out by the use of large hives, but if we wish to succeed we had best begin with the races that are nearest to our ideal.

I will have more to say concerning the Italian bees when describing the apiaries of central Italy. I saw there, in Bologna, at the home of Mr. Enrico Penna, the most perfectly kept apiary that I have seen anywhere, all things considered, and I propose to give our readers a full account of it. But so many have asked me to write an account of our entire trip, not omitting even the sight-seeing, that I feel bound to acquiesce. Thus, if my readers find columns that do not contain any bee-news, in these "Notes from Abroad," they will please remember that it is in response to the wishes expressed by many, of a thorough account. I have a number of photographs, landscapes, apiaries, bee-meetings, etc., which will illustrate these notes as we go along.

When we left the shores of America, in June last, we found in our cabin, at the departure of the boat, some 25 farewell letters, from our friends on this side, and an immense bouquet, an armful of roses. We wanted to mention this because we still feel the emotions which arose in our breasts at the sight of such fine tokens of friendship from all around. If any of you have dear friends leaving for far-away shores, you cannot please them better than by anticipating their departure with some such farewell.

Arriving at Havre on July 2, we at once took the special train for Rouen. As the train slowly pulled out of the docks, a swarm of ragged children followed it, holding out their hands and begging for coppers. We were very indignant at this sight, but were told that the New York arrivals are the cause of this begging, because the Americans amuse themselves throwing small pieces of money to the children to see them tumble over each other. This is a bad practice, and ought to be stopped. It actually creates beggars by offering a reward to begging. The practice of begging is much lessened in Europe; we did not see a single beggar in Switzerland, very few in France, and it is time to put an end to it everywhere.

I will not say anything about our visit in Rouen. The August number contains a sufficient account.

We reported having visited the office of L'Apiculteur, of Paris, the principal journal of apiculture of France. Very few people know that this is now the oldest periodical on bees in the entire world. The oldest was the Bienenzeitung of Germany, but I am informed that it has ceased its publication, there being now several other journals on bee-culture, in that progressive country. So L'Apiculteur is now the senior of all the bee-journals, our own American Bee Journal being next to it in age, and the oldest in the English language. L'Apiculteur is now 57 years old. Its first editor, Hamet, and my father had very strenuous discussions upon the advantages of the movable-frame hives and the modern systems of bee-culture. It was Hamet who called the honey extractor "a useless toy." But he has been dead many years, and his successors, Messrs. Sevalle & D'Autemarche believe in progress. The president of the "Société Centrale," the National bee association of France, is Mr. Bonnier, a great botanist as well as a beekeeper of note. He has lately published a "Nouvelle Flore," and an "Album De La Nouvelle Flore," which contain descriptions and cuts of the flora of France. He is now publishing a "Flore Complète" of France, Switzerland and Belgium, with colored plates of the finest finish. Two volumes of this have already appeared, and I have secured them. One feature of his botanical works is that he never fails to mention the plants that are useful to bees. This is valuable to beekeepers everywhere.

We called also upon Mr. Condamin, the publisher of "L'Apiculture Nouvelle," which is really the representative of American ideas in France. This magazine, which is only 8 years old, has begun on a progressive method at once, reproducing many of the cuts that are published in Gleanings in Bee Culture. We are informed that it has many readers on this side of the Atlantic, some 500 of whom are French Canadians. Those of our friends who were kind enough to express the wish that the American Bee Journal be also published in the French language, are respectfully referred to this publication, which would probably give them entire satisfaction.

I have a cousin in Paris, who is exactly of my age, and with him we visited some of the monuments, but it would tire the reader to tell him about the beautiful things in Paris. He can read descriptions of this kind in any travel magazine or book. We prefer to take him with us to the by-ways that the average tourists does not seek.

We must, however, give a word to the National holiday of France, the 14th of July, the anniversary of the destruction of the Bastile, the political prison and fortress whose downfall sounded the knell of royalty in France, at the end of the 18th century. The French are lovers of pleasure, and this disposition showed clearly in the preparations for the National holiday during the two days that preceded it. Flags were hoisted, rows of colored electric bulbs were hung over the monuments, and at night many streets were closed to vehicle circulation to permit of public dances right in the middle of the streets. The increase of visitors and of traffic was such that we concluded not to remain, for we dislike crowds. So we departed by rail on the very morning of the 14th.

CANADIAN BEEDOM~

Conducted by J. L. Byer, Mt. Joy, Ontario.

Wintering Prospects in Ontario

Bees, I believe, are going into winter quarters in first-class condition. Our own are exceptionally heavy in the brood-nests, and our feeding bill has been lighter than usual. Much of this honey is from buckwheat, but as it was gathered in a slow flow, in hot dry weather, and well sealed, I have an idea that it will be first rate for winter stores. In no case have I taken any from the brood-nests, even if colonies were so heavy that I gave them no sugar syrup at all.

◆

Second-Hand Cans

Mr. Diemer's experience with second-hand 60-pound cans is typical of what often occurs when these used tins are put on the market again. And the worst of the thing is that the buyer of the honey stored in such tins is generally the loser—not the fellow who sold the goods. As to the bees being so plentiful in the honey as to make it easy to tell the race kept by the beekeeper, that is quite a scheme, pretty much on a par with the dairyman who has enough hair in his butter so that the color of the cows may be known to the customer.

◆

Clipping Queens

If there was anything in Prof. Bigelow's contention that more than one queen goes with a prime swarm, our practice of queen clipping might as well be abandoned at once, as control at swarming time, when one is in the apiary, and the assurance that a swarm will go back if it does swarm while we are absent, are the main reasons why we clip queens. Needless to tell any one, who has tried the plan, that our expectations are seldom disappointed in that line either, and in running large out-apiaries it would be a problem to get along without clipping the queens, for in at least nine times out of ten, if the old clipped queen is caught in front of the hive at swarming time, the bees will come back again.

◆

How Much from Beekeeping?

If I may be allowed to criticize Mr. Wilder's advice to the men who asked if they could make respectively $20,000, $50,000, and $100,000 at beekeeping, I would say that said advice is so unlikely to come true that it should never be given that way at all. I believe that 99 out of 100 who start out with that idea of beekeeping, will be bitterly disappointed in the end, and will more than likely reproach the one who held out such glittering prospects.

By all means let us be conservative in a matter of this kind, as that course is better for those who are already in the business, and for those thinking of engaging in this line of work as well.

◆

Orange and Sage Honey

A short time ago I was favored with some samples of honey from California, sent by Homer Mathewson, of Binghamton, N. Y., a friend I had the pleasure of meeting at Albany when the National convention was held there.

The samples were from orange and sage. The first named was delicious in flavor, but not as heavy in body as to be rated No. 1 in that respect. But the flavor had a decided "morish" taste, and I would give quite a bit for a can of real orange honey for our own use *for a change*. This latter qualification is to assure you that for steady use I still think there is nothing better than our own clover honey.

The sample from sage was very heavy in body and light in color, but the flavor was not appreciated very much by any member of the family. All pronounced it as having an oily flavor, and one made such a base slander as to say that it had a semblance of *castor* oil. Now, see here, you sage honey men, please notice that *I* did not say that; so don't turn your ammunition in my direction. Laying all joking aside, I wonder if the honey was not mixed with something besides sage, and if such was the case, no doubt our California friends would know the source of this "oily" flavor.

◆

Address Before the Apiculture Club

It was the writer's pleasure to talk to the Apiculture Club at the Ontario Agricultural College on the evening of Nov. 10. The class is a large one, and I judge that about 125 turned out and listened patiently to a lot of "hot air." I suspect that the splendid interest manifested may have been caused by the desire of a lot of *boys*, and some

Little Alva Berry, Age 4 Years.

I am sending you a picture of my little son taken with the bees. On a walk to a cornfield 2 miles from my home, June 13 of this year, I discovered this beautiful swarm hanging on a limb bent nearly to the ground. Having 25 colonies at home, and some empty hives, they looked good to me, so I took my pocketknife, trimmed the limbs and carried them 2 miles home. I called a friend in Atchison, a distance of 6 miles, to come and take the pictures—the little fellow holding the swarm of bees is my son. He is 4 years old, and is not afraid of bees; yet he has been stung several times.

I started with bees 3 years ago, and have increased to 25 colonies, and want to reach a hundred. I like to work with the bees very much. Walter Berry.

Rushville, Mo.

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girls, too, to make another "boy" feel at home. No matter what prompted them in their actions, we will remember for a long while the splendid reception given, and hope that at least something of value may have been dropped during the rambling address they heard.

Kingbirds Catch Worker Bees

Mr. A. D. D. Wood says, on page 380, that kingbirds only catch drones. I wish that I could agree with him, as the bird in question is one of the best, from an insectivorous standpoint. But I have seen them scores of times catching loaded workers, in the evening, when not a drone would be flying. I have been within a few feet of very bold ones, and saw them catch loaded bees just at sunset. Even if they do catch worker bees, we could almost afford to spare the birds for the good work they do in other lines, but from experience at different times I am afraid they often catch queens when on their mating flight.

This is particularly true if the birds have a nest of fledgelings near the apiary. In a case like that an immense lot of food is needed every day. Finding no worker bees in the stomach of the birds is no evidence, as I have often dissected a bird right after watching it catch many bees, and never yet found a bee perfect enough to tell if it was a drone or worker. I believe that, as a rule, the bee is crushed and certain parts swallowed, the balance being dropped at once on the ground. But if there is anything I am sure of at all, it is that kingbirds catch worker bees as well as drones.

Comb or Extracted?

For a number of years I have advised inquirers to produce extracted honey instead of comb. Judging by present conditions too many have been following this plan. Present prices and *conditions* in the honey market, say with no uncertain sound that the apiarist equipped and qualified for comb-honey production can make no mistake in following that line of the business. Some one has asked the Beekeepers' Review editor to change the familiar "Keep more bees," on the front page, to "Eat more honey.' First class advice, and let all who have influence in these matters in Ontario, take up the same slogan.

CONTRIBUTED ARTICLES

Disturbing Bees in Winter

BY G. M. DOOLITTLE.

A CORRESPONDENT writes thus: "Will you tell us in the American Bee Journal whether it is detrimental to disturb bees in winter. Should one wish to look after their welfare for any reason, such as lack of stores, to see at about what time the queen begins to lay, or anything that a man with the bee fever might want to know, would harm come by so doing? Must I positively let them alone after they are in the cellar for the winter months, or if left on the summer stands?"

During the summer season, with the mercury at 70 degrees or more in the shade, the handling of bees by removing the frames from the hives can do no harm unless perchance this is done in time of a scarcity of nectar, and so carelessly that robbing is started. But, as a rule, it is better not to disturb any colony unless something is to be accomplished by so doing. If you wish to post yourself about the inside workings of a colony, then it is better to set aside some individual colony for that purpose, and let the knowledge gained be considered as the financial profit from that colony, for no colony can do its best at storing honey where the roof of its house is removed every few hours.

Where anything is to be gained by looking after the welfare of a colony, which is supposed to have a poor or failing queen, scarcity of stores, poor combs, etc., then the disturbance of such a colony is not to be considered, as the profit will exceed the disadvantage.

But when it comes to the winter months we have altogether different circumstances. The bees have "gone to bed" for a six weeks to four months' nap, in accord with continued cold out-of-doors, or with the will of the apiarist if wintered in the cellar. If the apiarist has been "abreast the times," he will have looked after their stores in the fall, to make sure that none will be short until spring opens. Good stores and a temperature of from 43 to 47 degrees, with darkness, are necessary for cellar wintering, and good stores, proper protection through windbreaks and packing are all that is required for wintering on the summer stands. So why disturb the bees? Better post up for the next season by getting down your back volumes of the American Bee Journal and all the books you can afford which treat on our specialty.

But if the bee fever of a novice runs so high that his curiosity must be satisfied as a safety valve, then perhaps it would be better to disturb the bees of one colony at their peril than that the patient pine away under the fever. If the bees are on the summer stands, and a day comes sufficiently warm for the bees to fly freely, there is no harm in looking at them, for there is very little if any brood, and should there be a little in two or three frames, the large number of bees in proportion will cluster over this brood so no harm will result. Often there will be a few hours of sunshine with the mercury up to 50 in the shade, when bees in chaff-packed or double-walled hives will hardly wake up enough to fly. Under these conditions I have thought it paid to arouse the bees by opening the hive of such colonies as do not fly, or jar or pound on the hive a little to wake them from their winter sleep, so they will fly and carry over honey from the outside combs into the cluster, thus preparing them for a few weeks more of cold weather.

Where bees have been properly prepared for winter during September and October, they should be let alone during the winter months. If there is a *necessity* for disturbing them I should not hesitate. Only do not create a necessity through procrastination or willful neglect of getting the bees in the best possible shape for winter during the fall months. There is little question but that disturbance causes the bees to consume greater quantities of food, and often sets them to rearing brood when they otherwise would not do so.

But I have many times proven that such disadvantage was overbalanced by the advantage gained along other lines. Let me give one or two illustrations:

When I had been keeping bees some two or three years a farmer living two miles distant, advertised 27 colonies for sale in box-hives at $5.00 each. This was considered a big price at the time, but like any beginner I was anxious for more bees, so I went to see them. He kindly consented to let me look them over, which I did by carefully tipping the hives on the benches they occupied, as they were wintering out doors. I found that most of them were light in stores, and that there was only one colony in the lot that I considered worth the $5.00. I offered $5.00 for this one, which he took. I wrapped it in one of the sheets I had brought along, put it on the opposite side of the cutter seat which I occupied, turning it bottom-side up, and drove home in the twilight of a cold evening in the forepart of January. I well remembered how the bees roared, as the sleighing was poor, and how I inwardly censured myself for not leaving them where they were until spring, as "such a disturbance as this" would surely cause them to die. When they got quiet, about 10 o'clock that night, I carried them to the cellar where the rest of the bees were, took the sheet off and set them in their place beside the others, still bottom-side up, as in the early 70's we always wintered bees in box-hives that way.

No more of the farmer's bees were

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sold, and imagine my surprise to find on going there one day the last of April, that all but 2 of the 26 colonies left were dead, while the one I had disturbed "nigh unto death" was one of the best colonies I had; it gave a good swarm that year and stored 129 pounds of "box honey."

After our great loss of bees during one winter in the latter 80's, a winter extremely cold and long drawn out, the claim was made that the bees "froze to death." I did not believe it, but claimed that no chance to fly during 5 months of "long confinement" was the cause. The argument "waxed so hot" that one afternoon the next winter, when the mercury stood at 12 degrees below zero, I took a colony of bees, and with cover and bottom-board removed, suspended the hive a foot above the ground, leaving it thus for 36 hours, during which time the mercury got as low as 23 degrees below. This colony was then put on its old stand again, and came out in May fully equal to any of its fellows, which had no disturbance above the usual winter's elements.

In conclusion, allow me to say that if there is anything in this article that would seem to show that the disturbing of bees in winter does no harm, I protest in advance against the assumption that I advise such disturbance. I do not so advise except where some gain is expected to be made.

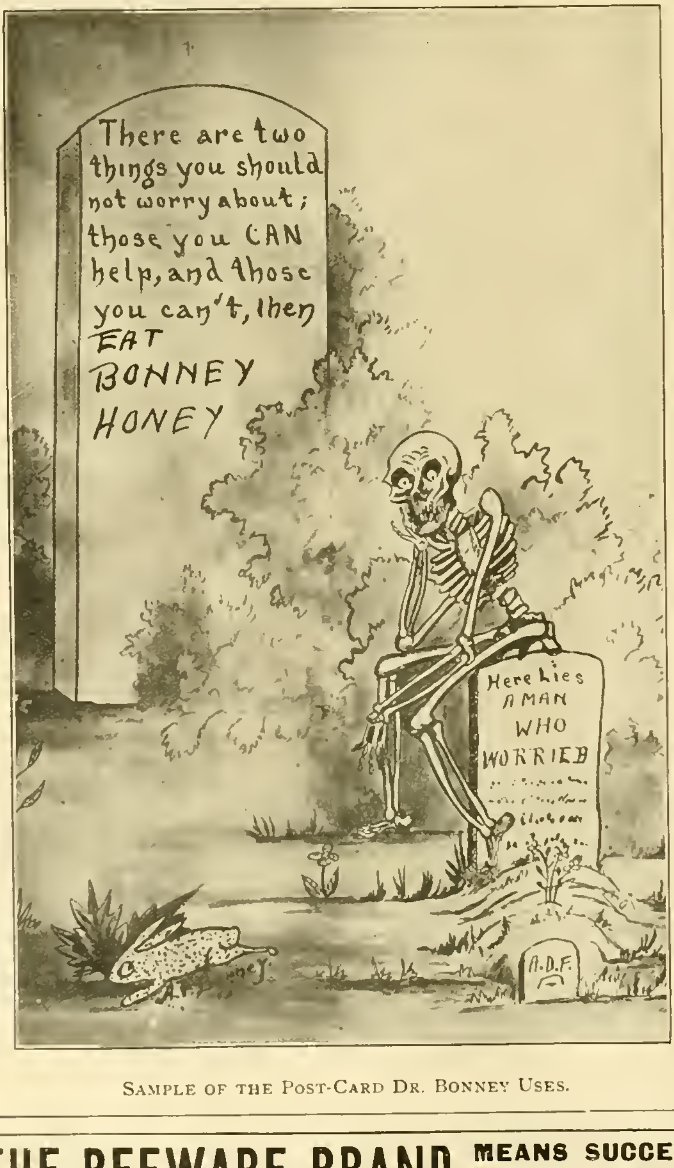
Borodino, N. Y.

Beekeepers I Have Known—"Dr. A. F. Bonney"

BY FRANK C. PELLETT.

THERE are no words in my vocabulary to adequately describe Dr. Bonney, of Buck Grove, Iowa, for he is undoubtedly the most unique character among Iowa beekeepers. Because of ill-health he was for years a wanderer in search of a climate that would benefit him, and he has met with many adventures such as fall to the lot of few men. Detective, photographer, chemist, assayer mining expert, explorer, lecturer, editor; all these he has been and more in addition to his regular profession, that of a physician, and now he is rounding out an eventful life as a beekeeper in a quiet little town in western Iowa.

A. F. Bonney at 27


There are two things you should not worry about; those you CAN help, and those you can't, then EAT BONNEY HONEY
Here Lies A MAN WHO WORRIED
A.D.F.
honey

Sample of the Post-Card Dr. Bonney Uses.

Dr. Bonney has unlimited resources as an entertainer. His gift of ventriloquism led the Indians to call him "The man of two voices," and he has many times mystified his friends by his feats of sleight of hand. He was a resident of the southwest in the old days when every man carried a six shooter to serve as a lawyer, judge and jury in the settlement of disputes. The old habits unconsciously manifest themselves at times. For instance, in any company he will take such a position that no one can approach him from behind. His adventures in Old Mexico and the southwest would fill a book, and his stories fairly bristle with thrills. It is said of him that he had frequently to change his sleeping place in the days when he edited a socialist paper in a little town in Arizona, because of the fact the enemies frequently shot through the rooms where he was supposed to be sleeping. On one occasion he proposed to a gun man, who had a grudge against him, that they shoot at a mark, and the poorest marksman leave the town forever. Dr. Bonney won and the other fellow handed over his gun and left the place according to agreement.

Dr. Bonney is constantly starting something among the bee men, either

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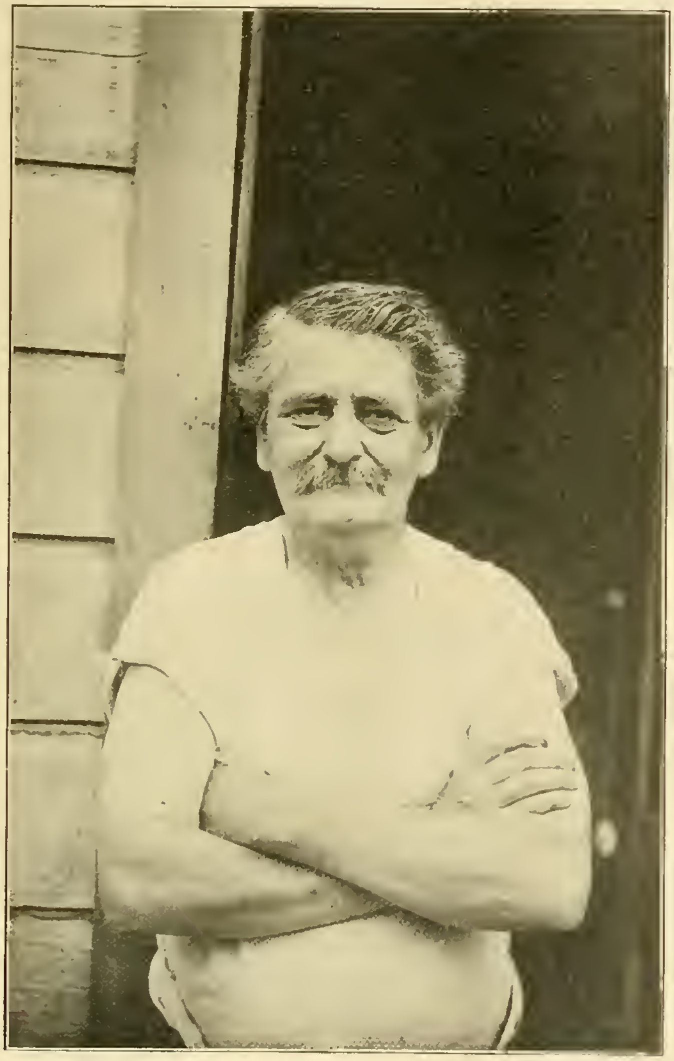
with his tongue or pen, and is always engaged in some good-natured controversy as to whether or not bees reason, or whether they can be improved, or some other of the many perplexing questions that are always before us. The writer and the Doctor cannot agree for 10 minutes at a time, although we are the best of friends. It looks like the only way we can ever settle our differences is in a similar manner to the Arizona contest, but as the writer is a poor marksman, he will hardly risk such a challenge.

Dr. Bonney is a persistent advertiser, and sells his honey at good prices. His favorite means is a comic post card, in some corner of which appears a rabbit and the words "Eat Bonney Honey." By sending out a batch of these cards at any time he usually finds a lot of customers for his product.

Atlantic, Iowa.



A. F. Bonney.

Bee Diseases

BY GEORGE W. BERCAW.

My contact with bee-diseases has been more from observation than from experiment, owing to the fact that none of our many yards has ever been more than lightly affected. Some years ago we purchased an apiary of 100 colonies, and among them found a few light cases of foul brood. It being in a very light form, we very readily stamped it out by taking it in hand immediately.

I do not think any up-to-date bee-keeper needs to feel alarmed if he will only heed the advice given, and take immediate steps to stamp out any disease that may show itself in his yard, and do all in his power to assist some brother beekeeper in his immediate locality who might be so unfortunate as to have disease among his bees. In my travels through different parts of the State I have come in contact with various bee-diseases. I have seen out-apiaries, located ofttimes in out-of-the-way places, where the owner visits them about once a year to get the honey, leaving the bees to shift for themselves. Here I usually find old box-built antiquated hives with odd-sized frames, sun-warped covers and sides, with bee-entrances on sides, top and bottom. It is not an unusual thing to find such bee-yards in this State. Not all are affected with disease, but a large percent of them are, and in view of such conditions, easily succumb. Contagious diseases spread very fast among the human family, and this is no less true in insect life; infected bees are as a general rule weak, and are an easy prey to the stronger colonies, thereby spreading contagion by reason of the robbing of honey.

In producing bees and queens commercially for shipment, extreme caution should be exercised, taking no unnecessary chances in shipping anything from a disease-affected yard or from a locality where it is known that any diseased bees are kept. I would suggest that *all* persons owning bees, whether for pleasure or for profit, keep a close watch over them, and in event of anything suspicious call for the inspector, and do not wait. He will gladly assist you and give all the aid at his command to stamp out disease and prevent its spread.

The time is at hand when these suggestions will have to be handled under a more systematic method, and much good can be accomplished by the earnest and faithful co-operation of every bee-keeper interested, whether he has one or a thousand colonies.

Glendale, Calif.

Well Preserved Honey — Extracting by Centrifugal Force

BY DR. A. F. BONNEY.

The National Geographical Magazine for September, among other things, contains a statement so startling that bee-keepers will no doubt agree that it is utterly false. However, we must remember that conditions of heat and moisture are very different in Egypt from here, that things were sealed and buried deep in the earth. Again, the men who are conducting those excavations are of well known integrity, and have no possible interest to deceive. On page 999 I read:

"The tomb was intact, and the objects it contained were as perfectly preserved as though they had only been shut up a few weeks before * * * Two beds of fine design decorated with gold occupied another part of the chamber, while a light chariot in perfect preservation stood in a corner.

FRESH HONEY 3000 YEARS OLD.

"Most startling of all was the discovery of a jar of honey, still liquid and still preserving its characteristic scent after 3000 years. 'One looked" says Mr. Weigal, 'from one article to

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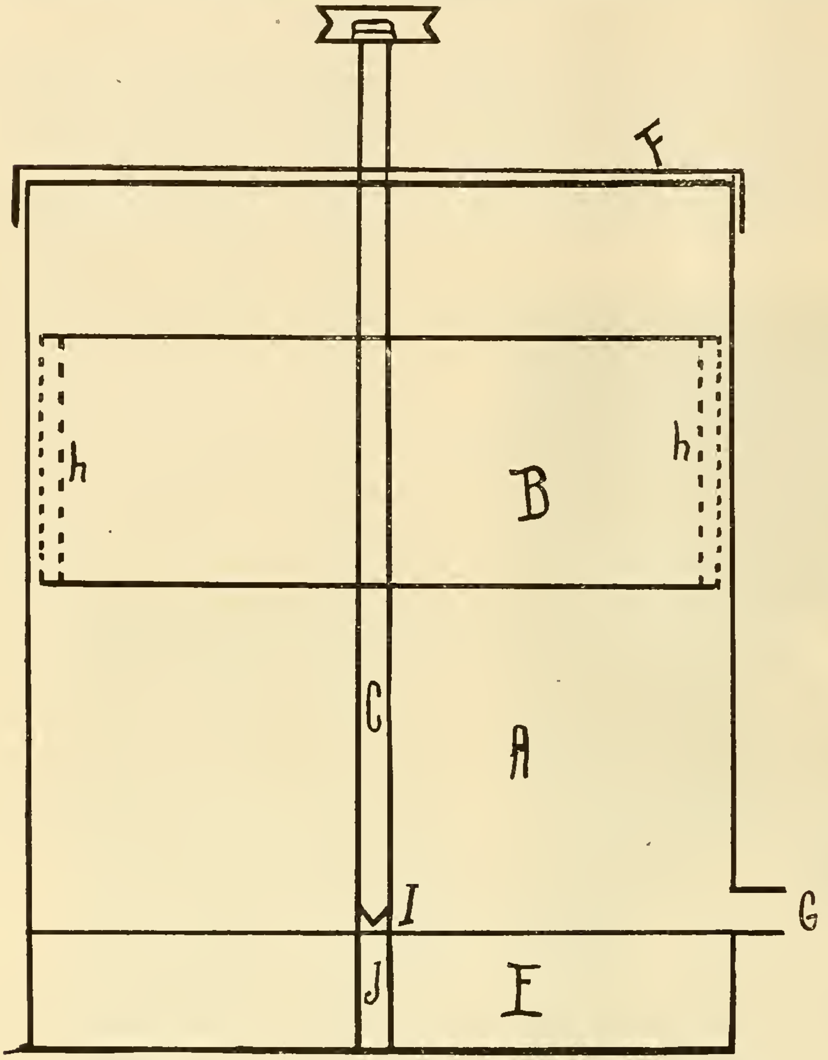

Diagram of Mr. Bonney's Idea of a Wax Press.
A, tank; *B*, cage; *C*, shaft; *D*, pulley; *E*, water space; *F*, cover; *G*, honey (wax) gate; *hh*, walls of cage; *I*, pivot joint; *J*, base for shaft.

another with the feeling that the entire conception of time was wrong. These were the things of yesterday, of a year or two ago."

If my memory serves me, there was found while excavating Pompeii, vessels containing fruit so well preserved that the flavor of the different kinds could be detected by taste and smell, which renders a little more probable this other story, remembering as we do that cloth, paintings, feathers and mummies have come down to us as fresh as though buried yesterday. When the mummy of Seti was unwrapped his features were found so well preserved that any one knowing the living king would surely recognize him. He lived nearly 3500 years ago.

"It is not our knowledge of the past that makes us proud of the present, but our ignorance."

A CENTRIFUGAL WAX EXTRACTOR.

For 3 or 4 years the writer has studied over a cheap simple way to separate wax from waste, and applying some of his knowledge of mechanics and philosophy found that if a machine is made as follows, from 95 to 98 percent of all the wax can be saved. The three factors are time, heat and motion:

Construct a tank according to your needs, say 36 inches high and 30 inches in diameter. Have the cover fit very tightly, possibly clamps will be needed. In this can is a perpendicular shaft extending from the bottom of the tank to a foot above, and on this shaft, inside the tank, is a shelf almost as large as the inside of the tank, while outside on the shaft is a small pulley.

The table should be of metal with a few corrugations one inch deep at the edge, and none at the hub. Around the edge of the table is a wall of wire mesh, one-sixteenth of an inch mesh or larger, or a double wall, the outer of fine screen, the inner of coarse. These will be about 2 inches apart and a foot high.

In the bottom of the tank is a space for water, and at a height of 6 inches a honey-gate to draw out the melted wax. A pipe conducts steam into this tank, or arrangements can be made to heat the contained water. I prefer the steam idea, as it can be run in superheated, and will render the wax as liquid as water.

It will be seen by the mechanically inclined that if wax of any kind is put into this cage, heated, then the table revolved 200 to 1000 times to the minute, every particle of wax will be thrown off, as the water is thrown from washed clothes in the laundry centrifugal drying machine or the cream from the milk in the separator. Any machinist will plan the thing for you. That the idea is entirely practical I feel very sure.

Buck Grove, Iowa.

Honey Production in Michigan

BY IRA D. BARTLETT.

My apiary consists of 160 colonies, and I harvested 17,000 pounds of wild red raspberry and clover extracted honey, and about 200 pounds of comb honey in 1912. The ground is very level, as you will note, but to the north and west of the apiary there are ranges of hills. It will be many years before they are used for agricultural purposes. At present they are covered with wild red raspberry and milkweed plants. In the ravines are little brooklets, and here the willows bloom in the spring, and furnish plenty of pollen and some early honey for brood-rearing. In these wet places the goldenrod thrives also, and blooms later in the fall, and on the hills where there are some scattering plants.

To the east the Jordan river flows from the north, and along the river bottoms large fields of alsike clover are grown. For some reason alsike clover has not secreted much nectar for several seasons, but years ago we depended almost entirely upon it for our honey crop.

We have a very diversified soil here, so the source from which we get our honey changes with the season. In 1912 it was very wet just previous to opening of the red raspberry, and then it was very warm and dry during the flow. The result was a heavy flow from raspberry, but the dry and warm spell during the raspberry and clover came just at a critical time for the milkweed plant, and so we got very little from that source.

We have a great number of honey plants here in northern Michigan, but as it is usual in any country, there are but few plants that give us any quantity of surplus. We have the soft maples, willows, poplars, water maples, dandelion and fruit bloom early; then raspberry, clover, red and white alsike, willow herb, sumac, basswood and milkweed. The fall honey plants are goldenrod and buckwheat. There are

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Mr. Ira D. Bartlett in His Apiary.

also numerous other plants that the bees work on, but they give no noticeable amount of surplus.

As you will notice, the hives are placed an equal distance from each other both ways, and in pairs. All colonies face the east. The hives I use are the 10-frame full depth. I have, however, about 30 8-frame ones. I tier up from the bottom by raising all supers that are on, and placing the super to be put on directly over the broodnest. I have a sufficient number of supers to harvest a crop. The queen-excluder is used on all hives, being placed on about July 1. In 24 days all brood is hatched, and then the honey is taken off with bee-escapes and stored in the honey house, where it is heated to the proper temperature, extracted, and run into 60-pound tin cans, cased, and then they are ready for market.

I have one other apiary similar in size run the same way. The tall hive of bees shown in the picture produced 300 pounds of extracted honey in 1912.

East Jordan, Mich.

The Season of 1913 in Central Illinois

BY C. F. BENDER.

THE difference in seasons is marvelous. Having kept bees in one locality nearly 20 years, and making honey-production my business, I had begun to pride myself on being a good guesser as to future honey-flows. But my pride as a forecaster has vanished. If some one were to ask me now if we were likely to get a honey-flow from mushrooms, or whether ginseng honey would be plentiful next year, I should answer, "I don't know."

Our season began in April with a heavy flow from dandelions. Bees were wanting to swarm by May 1, and about 10 pounds of dandelion honey per colony was stored in supers. That was broken record No. 1. I had never had any surplus from dandelion before, and never had to fight swarming earlier than June.

The white clover looked good, and we prepared for a record crop, but the heat and drouth spoiled the bloom, and the season ended about June 20 with 5 pounds of white-clover honey per colony. Then we had 10 days of robbing, with a little honey-dew coming in, enough to spoil all sections of white clover that were not completely sealed. I cancelled my order for shipping-cases, and otherwise took in sail. According to all previous experience we were slated for a poor season. The white clover was completely dried up, and the dry spring had spoiled all chance for a fall crop.

But another surprise was in store. About July 1 red clover began to yield. I am pretty sure it was red clover, because I took great pains to sift the evidence. To begin with, the weather had been so remarkably hot and dry that there was little else in bloom; then a great many of the incoming bees carried the typical red clover pollen, and we never get that shade of brown pollen from anything else. The red-clover fields showed great numbers of bees at work; and the men who cut the hay complained that the hay forks and mowing machines were all sticky with honey. I could find very few plant lice on the clover plants, and the bees seemed to be working altogether on the blossoms.

It was important to be sure that the honey came from red clover, because I wanted to know what red-clover honey was like. I believe that the bulk of my crop was from that source, and it is even whiter than the white-clover honey, and quite as fine in flavor.

I have three small apiaries, and there happened to be large fields of red clover in reach of each. Perhaps for that reason the crop was greater than I ever got from red clover.

With me the season was also peculiar in giving a large crop of honey with no swarming after dandelion. Only one of my colonies tried to swarm after June 1. We did not have the usual intermission in August, the flow continuing right along, and after the red clover ceased to yield, or was all cut for hay, the Spanish-needle began and lasted until Oct. 1.

About Sept. 20 some kind of wild aster began to yield, which was another unusual thing. I took off all supers just before Oct. 1 as usual, for the storing in comb-honey supers nearly ceases when cold nights come. But I was sorely tempted to put them on again, for honey kept coming in briskly up to Oct. 20, when we had our first killing frost. Dandelion also bloomed freely in October, and likely helped.

For once we have "gathered grapes of thorns, and figs of thistles." That the worthless dandelion should produce solid cash; that protracted drouth should cause a bountiful honey crop;

that this great yield should be gathered without swarming; that supers should be needed in October, and that 95 percent of all this honey should come from plants that had never given me surplus before; these have been what Dick Swiveler called "staggerers."

Newman, Ill.

The Value of Exhibits

BY J. M. KILLIAN.

ATTACHED is a picture of a bee and honey exhibit that I made at our county fair. You will notice that we had an old "bee-gum," also a box-hive and a straw skep; together with several modern hives. The intention of the exhibit was to show the evolution of the bee hive from the straw hive on down to an up-to-date hive.

I had never seen a hive made of straw, but from photographs and descriptions of them, I cut some rye when it was beginning to get ripe and allowed it to cure. Then I twisted and formed a continuous rope of straw and shaped it as you see in the photograph. It was the object of much curiosity at the fair, and hundreds of people asked questions about it. Only a few of the older ones had ever seen one. We had quite a display of honey, both comb and extracted, also beeswax and "chunk honey."

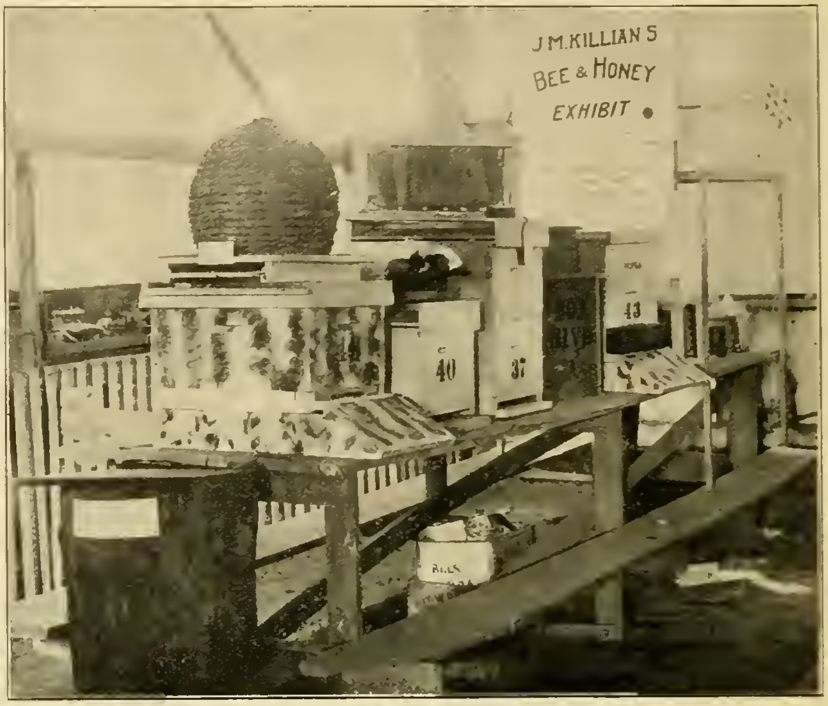

EXHIBIT OF J. M. KILLIAN, AT ROCKPORT, IND.

But the part of the exhibit that caught the crowd, was the observatory hive of live bees, working on a nice frame of wired foundation. The queen was the admiration of all who saw her. A display of this kind does not pay so far as the premiums given by the fair are concerned, but as an advertisement of your honey, nothing can compare with it. My honey is all sold near my home; in fact, most of it in my own town; so you see I met and talked with the people who buy and eat my honey; and they like to see and get acquainted with the man who produces it.

And, say! you have the finest opportunity to explain away that old canard about manufactured comb honey, and you have no idea how many people believe it, and how much harm it has done the bee-industry. It takes considerable self control to be pleasant and talk kindly to one of those fellows who tells you that he *knows* it can be manufactured, for he has bought it, and the grocer told him it was manufactured honey, etc. But I always explain to him the reason why it cannot be manufactured, get him to pay me a visit and see the bees at work if possible, and after you have convinced him that it is a mistake. he is always ready to correct others that he may meet.

I have been producing chunk honey for eight years, and selling it for 20 cents a pound.

Rockport, Ind.

DR. MILLER'S ANSWERS

Send Questions either to the office of the American Bee Journal or direct to
DR. C. C. MILLER, MARENGO, ILL.
He does NOT answer bee-keeping questions by mail.

Transferring and Feeding

1. When is the best time to harvest honey from the bees?

2. When is the best time to transfer bees from a tree or box-hive?

3. When is the best time to feed the bees?

4. I had one colony and lost it by feeding them only sugar water. Other bees robbed them and they starved. What is the best feed, and how and when shall I feed them?

TEXAS.

ANSWERS.—1. If it is comb honey, the sooner it is taken after it is sealed the better, because the whiter the sealing the better it will sell, and it becomes darkened by being left on the hive. If it is extracted honey, you can take it as soon as it is sealed, or you can leave it on the hive until the bees are done storing. But if you care for your future market, don't extract unripe unsealed honey.

2. If you want to transfer the bees with little or no regard for honey, there is probably no better time than in fruit-bloom. If you want to get as much honey as possible, do it at the close of the honey harvest.

3. The best thing is never to feed them, but let them gather their own stores. But if the season is a failure, as it is some years in most places, then you must feed. The best time for that is just as soon as you know they will need feeding for winter; say in August or September. October does very well, however, and even if you haven't fed until December, better feed then than to let the bees starve.

4. The best thing is to give them combs of sealed honey, but it isn't likely you have them. The next best is a syrup of granulated sugar, probably just what you did feed them, only there was probably something wrong about the way you fed that started robbing. Of course, I cannot tell what it was that was wrong; possibly you may have spilled some of the feed, or done something else that was a bit careless. Be careful not to leave any cracks open that will let bees in from the outside. If there is danger of robbing, it is well to give feed in the evening after bees have stopped flying, and to give no more at a time than they will clean up by morning. For fall feeding nothing is better than a Miller feeder. If you feed early, equal parts of sugar and water will be all right; but if you do not feed until after the middle of October, then you can have 5 parts of sugar (either by weight or measure) 2 parts of water.

Evidently you have no bee-book of instruction, and it will be big money in your pocket if you get a good one, say such a one as Dadant's Langstroth.

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Comb or Extracted?

Which would be the most profitable for me, comb or extracted honey? I was offered 6½ cents per pound for mixed extracted honey delivered at Indianapolis. The home demand (about 1000 pounds) is 15 cents per pound for comb honey. As I expect to make beekeeping my occupation, could I afford to sell extracted honey for 6½ cents per pound? INDIANA.

ANSWER.—It is not an easy thing to say what would be best; so many things must be taken into consideration, the peculiarities of pasturage, market, etc., but it would seem that you ought to do considerably better with comb at 15 than with extracted at 6½. There are places where extracted can be profitably produced at 6½ cents; but hardly in your locality.

Intrnducing Queens—Stores—Foul Brood

1. Should I introduce a tested queen into my colonies that have not shown much strength this season, and have not swarmed?
2. Is this the right time to do it, and how do you go about removing the old queen?
3. How much honey should I leave in each hive, as a winter supply for the bees?
4. Is it too late to remove any surplus honey at this time of the year?
5. How can I tell foul brood? NEW JERSEY.

ANSWERS.—1. Hard to say without knowing more about it. The likelihood is that there is not a good queen in a colony which has not become strong; yet something depends upon how much excuse it has for remaining weak. If it was very, very weak in spring, it is still possible the queen may be all right. But if it was reasonably strong early, has good combs, with not much drone-brood, and if there was enough pasturage so that other colonies built up strong and did well, then it would be we well to replace the queen with a better one.

2. It is getting pretty late, as brood-rearing is pretty much over, and it might be as well to wait until next season. There's no special trick about removing the old queen, just look over the brood-combs until you find her, and then mash her with thumb and finger. But don't kill the old queen in advance of having the new one, for sometimes there is delay in getting a queen.

3. A store of 30 or 40 pounds is none too much for wintering out doors, a stronger colony needing more than a weaker one, and for cellaring 10 pounds less will do. Better 5 pounds too much than 5 ounces too little. The overplus will not be wasted.

4. No; if supers are still on, take them off; only in so doing look out that you do not take away stores needed for winter.

5. You probably cannot tell it at all now, for it is a disease of the brood, and unless in a very bad case you can detect it only when brood is present. The chief symptom in American foul brood is the ropy character of the dead larva; stick a toothpick into it, and when you draw it out it will string an inch or two in a string. If European foul brood, look for larvæ that instead of being pearly white are quite yellowish. If you write to Dr. E. F. Phillips, Department of Agriculture, Washington, D. C., he will send you gratis valuable printed matter about foul brood.

A Cure for Foul Brood?

In the Western Honey Bee for October, page 26, and also in the advertising columns occurs the following by C. W. Dayton: "I will pay $25 for any case of foul brood (European or American) that cannot be cured with 5 cents worth of *antibum* (honey and water)." In the article he makes wonderful statements on his discovery of *antibum* and *aquasun*.

Let us know if this man is a *fake*, for if his claims were true, New York State would be soon cleared of foul brood, and Mr. Dayton would be kept busy making his cure. NEW YORK.

ANSWER.—I have much doubt as to the efficacy of the remedies named.

Introducing a Queen by Smoke Method

As I am just a beginner, I wish you would explain as clearly as possible how to introduce a queen by the smoke method. WISCONSIN.

ANSWER.—In Gleanings in Bee Culture for June 1, page 370, what you call the smoke plan of introduction is thus given by Arthur C. Miller, the inventor: "A colony to receive a queen has the entrance reduced to about a square inch with whatever is convenient, as grass, weeds, rags, or wood, and then about three puffs of thick white smoke—because such smoke is safe—is blown in and the entrance closed. It should be explained that there is a ⅞-inch space below the frames, so that the smoke blown in at the entrance readily spreads and penetrates to all parts of the hive. In from 15 to 20 seconds that colony will be roaring. The small space at the entrance is now opened; the queen is run in, followed by a gentle puff of smoke, and the space again closed and left closed for about 10 minutes, when it is reopened and the bees are allowed to ventilate and to quiet down. The full entrance is not given for an hour or more, or even until the next day."

Editor Root is very enthusiastic about the plan, since having tried it very fully with great success. In Gleanings for Oct. 1, he directs to start the smoker going, giving a dozen or two strong puffs out in the air. When the smoke rolls out of the smoker into the air dense and heavy, blow 3 strong puffs in at the entrance, and then close the hive. After an interval of perhaps 10 or 15 seconds, push the queen in at the entrance, follow her up with one more strong puff of smoke, and close the entrance. In all four puffs are given, all that a large smoker will give when the bellows is closed clear down at each puff. In five or six minutes remove the plug. He says the plan will not work with a small nucleus in a large hive, even if the rest of the space be filled with empty combs.

Carniolans or Italians?—Divisions

1 Which is the more fitted to Japanese conditions, the Italian or the Carniolan? This is a rainy and moist section.

2. Colonies often show intentions of swarming at the close of the honey-flow, when they have produced comb or extracted honey in abundance. Is it better or not to separate colonies before they show inclinations to swarm? If it is better to separate, how is the best way to do it? JAPAN.

ANSWERS.—1. To get an answer to this question the two kinds should be tried side by side. Even after knowing climatic conditions one can only make a guess, and my guess would be that the Italians are better.

2. Again I am on uncertain ground, but should think it better not to separate, so as to have strong colonies for winter.

Precautions in Uniting

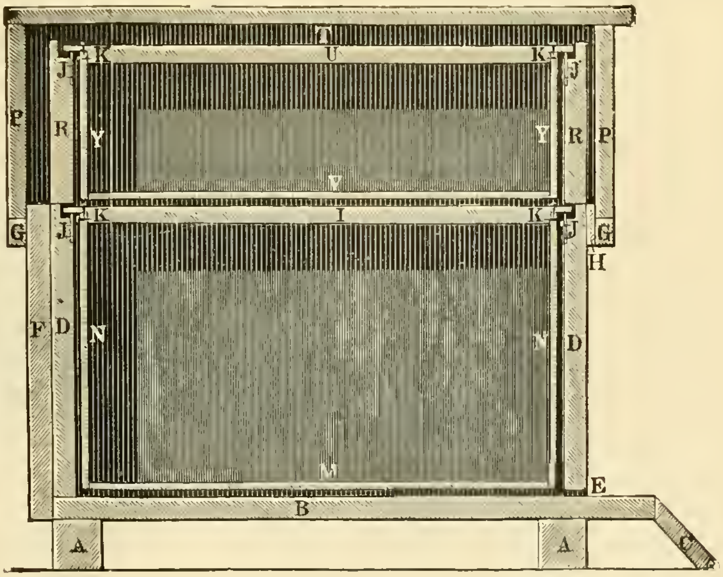
If you were to buy bees by the pound to strengthen weak colonies, what precautions would you take to insure a safe uniting? IOWA.

ANSWER.—Shake both lots on the ground all mixed up, and let them run into the hive together. As an additional safeguard, before mixing, dust both lots with flour.

Dimensions of the Dadant Hive

I have been looking through the American Bee Journal for dimensions of the Dadant hive and frame about which I wrote Mr. Dadant some months ago, but cannot find them. Will you kindly give them in the replies to queries. The expense of getting a sample hive here is too great.
C. N. WHITE, England.

ANSWER.—The dimensions of the Dadant hive are not given in any previous number



CROSS SECTIONAL VIEW OF THE DADANT HIVE.

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of the American Bee Journal; they are to be found only in the Langstroth-Dadant book and in Bertrand's "Conduite du Rucher" (Conduct of the Apiary), which has been published in eight different languages. The dimensions of the frame are about the same as those of the original Quinby movable frame. This hive is especially adapted to the production of extracted honey, and that is why it is very much more widely used in the countries where modern bee-keepers can secure almost as much for extracted per pound as for section honey. We give the cut of the hive. The dimensions are to be found in the Langstroth-Dadant book.

Foundation and Drawn Combs—Splints

1. I have been running my apiary for chunk honey, but find that I can find a sale for quite a lot of extracted honey. I have a few nice straight combs on medium brood foundation, wired. What would be the storing capacity of one colony with one-inch foundation starters, one colony with full sheets of thin surplus, and one colony with full sheets of medium brood foundation, as compared with a colony with full drawn combs; that is, if a colony with full drawn combs could fill 20 frames, about how much could the other respective colonies fill, everything else being equal. I expect to use full sheets of thin surplus for chunk honey, and full sheets of medium for extracted. I ask these questions simply to have some idea as to how much foundation of each kind to buy this season.

2. I use full-sized Hoffman frames. I have a good supply on hand, and do not wish to buy any more this season, or I would buy shallow frames. I notice that I can buy full-sized sheets of thin surplus to fit these frames, and expect to use them this coming season instead of narrow starters as heretofore. Do you think I will gain any more chunk honey by this?

3. On page 393, of "Langstroth on the Honey Bee," you advocate the use of wooden splints to support these wide strips of foundation. Do you use these splints in extracting frames as well as in frames for chunk honey?

4. Do you use splints opposite each other on the foundation, or do you use them on one side only? KENTUCKY.

ANSWERS.—1. I don't know. If you want me to guess, I'm willing to do my best at guessing. I must premise that by saying that the answer depends somewhat upon the flow. If a short and very heavy flow is oo, the fully drawn combs will have a much greater advantage than they will have in a light and long-continued flow. In the former case, while the colony with full combs stores 20 pounds, the colony with one-inch foundation starters will store from 10 to 15 pounds, and the colony with full sheets of thin surplus from 12 to 17. With medium brood foundation it ought to do just a little better than with thin surplus.

In the case of the long, slow flow, while built combs give 20, the starters should give 15 to 18, and the full sheets of foundation 16 to 10. I can, however, imagine an extreme case with an immensely heavy flow lasting only a day or two, in which 20 pounds would be stored in the built combs and not a drop in the others. On the other hand, I can imagine a very long flow with a very little more gathered daily than the bees need for their own use, and very nearly as much stored with starters as with full combs. But remember that all this is only guessing, and my guesser may not be in perfect working order. I think the editor-in-chief knows more about it than I do, and I'd be glad to have his guess, even if it makes mine look like the guess of a beginner. [My guess would be a greater difference when built combs yielded 20 pounds, say 10 to 15 pounds for starters, and 15 to 18 for sheets of foundation. I have seen sometimes what Dr. Miller states, 15 to 20 pounds in built combs and not a drop in the others.—EDITOR.]

FAMILY OF C. N. WHITE, OF ENGLAND.

2. There will be a very little gain in a long and slow flow, and a very big gain in a short, heavy flow

3. I would use splints in extracting combs, but on no account in chunk honey, unless the honey were afterward to be cut up on the lines of the splints and the splints taken out.

4. On one side only.

REPORTS AND EXPERIENCES

Twelve Colonies Yield $244.25 on a City Lot

The honey-flow here this season was the best ever, white clover especially. There hasn't been so much in 10 years. Sweet clover bloomed until frost killed it. We had a few acres of buckwheat that yielded well, but it was about 2½ miles from town.

I sold all of my honey here at home for 20 cents per pound. I sold $210.25 worth of comb honey and $34.50 worth of bees. Beekeeping is just a side-line with me, and all this was done on a city lot 75x150, with 12 colonies, spring count. I got 1307 sections from bees this season. I have 15 colonies all packed for winter, with an abundance of stores. Attached is a small picture of myself among my bees. This was taken just as the buds on the trees were shooting forth. To the left is my shop where I make my hives and do all of my work for the bees.

THE APIARY WHICH YIELDED $244 25 ON A CITY LOT.—OWNED BY FRANK LANGOHR.

No swarms got away from me this season, as I use the clipped-queen plan. I find this is the best way to prevent them from getting away. The experience of this season tells me that there is money in bees if conducted rightly. If I had a place, say 20 acres, I would be right there and have it stocked with bees, and make a better living than I do now.

I have worked 27 years for one man in a sawmill as head sawyer, and it is quite a relief to go home and spend a little time with my bees; not only a relief but a pleasure. If any of the subscribers can beat this record of getting 1307 sections and selling $210.25 worth of honey, and $34.50 worth of bees on a city lot four squares from the court house, with 12 colonies, spring count, I would be glad to hear from them.

The American Bee Journal has been a great help to me, and I cannot afford to be without it while keeping bees.

FRANK LANGOHR.

Columbia City, Ind., Nov. 13.

Scraping Sections

I, like some other writers, am willing to give valuable information away and not get it patented (excuse me for classing myself with writers). When I sat down to scrape over 17,000 sections of comb honey this fall, I tried several schemes to shorten and better the process. I got up after scraping, grading, and boxing it ready for market very tired. Now, the valuable recipe I am about to give to the old beekeepers as well as the new, is this: "Just keep on a scrapin'."

Nampa, Idaho. L. W. BENSON.

Revengeful Bees

An unusual case of injury to the "innocent bystander," is given in the following incident: At one of the farm houses in northeastern Pennsylvania, the children had a pet fox, which they kept in a chicken-wire cage staked down on the lawn. One day the farmer's wife came from the spring-house carrying a dish of honey. This she placed on top of the fox's cage for convenience while she busied herself with some other outdoor work. She forgot all about the honey until late in the day, and on hastening out for it found the fox dead. The bees from a neighboring hive had been attracted by the honey, and they had attacked and killed the fox. Do you believe that the bees blamed the fox for the theft of the honey?

Scranton, Pa. F. W. BRADY.

[You do not say whether the bees who took that honey were the same ones who had supplied it in the first place. It might have come from another hive. Don't you think that, if the bees could accuse the fox of stealing the honey, they might also have noticed that he was caged? If bees always tried to sting to death those who deprive them of some of their honey, some of us would probably have been stung to death by this time.

Laying jokes aside, it is quite probable that there was some dispute among the bees of several hives upon the carrying away of that honey. This is usually the case Then, angry behavior and fights being the result the restless fox was attacked as would have been other hairy, living creatures close at hand. At a time of robbing, we have seen the bees of very peaceable colonies attack men and beasts at quite a distance. That is another argument against ever exposing any sweets in reach of the bees in times of scarcity. Fighting for exposed sweets renders them uncommonly irritable.—EDITOR.]

Carniolans All Right

Attached is photograph of one of my Carniolan colonies. Please note in the Bee Journal of October, 1912, on page 311, I made inquiry about larger hives, and the advice I got from your valuable Journal shows the result this year. The colony in the photograph has made 210 pounds of comb honey this season. I can show you several colonies of these bees that did fine this year. We had a very short honey flow this summer. It was the severest dry weather I have ever seen. My Italian colonies did not get half the honey that the Carniolans did, and they say the Carniolans are swarming bees. In my estimation they are no worse than any others if rightly managed. Please note the way I am dressed, when working among my bees. It shows their gentleness. They work on red clover as well as any Italian bee, and they gather very little propolis and cap their honey nice and white. The Carniolan bee has come to stay in my apiary. EDWARD V. MABEK.

210 POUNDS OF COMB HONEY WERE PRODUCED BY THIS COLONY THIS SEASON.

Peoria, Ill., Sept. 16.

Good Report from California

I have finished extracting, and took a little over 0000 pounds from 102 colonies, spring count, and increased to 156 good, strong colonies, and they all had at least 30 pounds of honey; many of them with as much as 35 pounds. Many thanks for your instructions.

My honey for 1911 averaged 86 pounds of extracted per colony; 1912, 80; 1913, 90.

This is away over the average of this section of the country. I am sending you, under separate cover, a little bunch of *Polygonum bolanderi*. It begins to bloom about Aug. 10, I have seen bees working on it Nov. 4. They are working on it today with as much vim as they worked on alfalfa or white clover any time this summer. They usually store from 20 to 40 pounds of honey from this plant per colony. It just puts them into winter quarters in the best of shape. Lots of my bees have as much as three frames of brood now. This little weed grows on the upland and in rocky out-croppings on land that is almost useless. It is a member of the buckwheat family. There are hundreds of acres of it near here, and in many places the ground is just covered with it. W. A GRIDLEY.

Edgewood, Calif., Oct. 8.

Dry in Kansas

This has been the driest season Kansas ever saw, and the bees have not stored much honey. They started out well, but the hot winds dried up the flowers, and I had to begin feeding Sept. 1, but soon after rains came and vegetation sprang up like magic, and now they are working well on smartweed, dandelion, straggling sweet clover and other like flowers.

I had 30 colonies, spring count, and increased to 50, and they will go into winter in fair condition. W. L. POWELL.

Arkansas City, Kan., Oct 10.

1200 Pounds form 18 Colonies

My honey crop was fairly good this season. I had 18 colonies, spring count, increased to 10, and produced 1200 pounds of extracted honey. F. A. WICKLEIN.

Percy. Ill., Oct. 7.

In Fine Shape in Kansas

I have 11 colonies to go into winter, 9 of which are strong with full brood-chambers, and I am leaving a full super of honey on each of them, to make sure that they have plenty of stores. The other 2 colonies are young ones of this year; one a fairly early one with a full brood-chamber; the other one was a late one, July, and has a fairly good supply of honey, but I expect to place for each of these a supply in supers on the hives.

I winter my bees out-of-doors in a shed, and wrap the hives well with burlap, and the tops with tar felt. The 9 original colonies have put an average of 100 pounds to the colony into the supers this season; but only one swarmed, W. D. STAMBAUGH.

Richfield, Nebr.

[We would advise you to remove the combs of honey from the supers for winter, and fill the empty super with forest leaves or some other good packing material. With full brood-chambers the colonies will have plenty of honey to last until spring. Early in the spring you could replace the full super combs, one by one if the colonies needed them.—EDITOR.]

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New York State Convention

The New York State Association of Beekeepers' Societies will hold its next annual meeting in Rocester, N. Y., Dec. 2 and 3, 1913. We expect to have the usual good time renewing old acquaintances and forming new ones, and learning from the advice and experience of those working in our chosen field. All those interested in beekeeping are urged to be present. You can't afford to stay away, as we often get advice free that will bring us many dollars.

Irving Kinyon, *Sec.*
Camillus, N. Y.

Statement of the Ownership, Management, Circulation, Etc.,

of the American Bee Journal, published monthly at Hamilton, Illinois, required by act of August 24, 1912.

Editor, C. P. Dadant, Hamilton, Ill.

Business Manager, M. G. Dadant, Hamilton, Ill.

Known bondholders, mortgagees and other security holders holding 1 percent or more of total amount of bonds, mortgages or other securities, None.

M. G. Dadant, Business Manager.

Sworn and subscribed before me this 2d day of October, 1913.

H. M. Cuerden,
[seal] *Notary Public.*
My commission expires Aug. 25, 1917.

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Golden Queens that produce Golden Workers of the brightest kind. I will challenge the world on my Goldens and their honey-getting qualities. Price, $1.00 each; Tested, $2.00; Breeders, $5.00 and $10.00.
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HONEY AND BEESWAX

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W. L. Ritter, Genoa, DeKalb Co., Ill.

For Sale—No. 1 white clover comb, $3.50 per case; No. 2, $3.00 per case. No. 1 fall comb, $3 00 per case; No. 2 fall, $2 50 per case. All cases have 24 sections, and 6 cases to carrier. Quirin-the-Queen-Breeder,
Bellevue, Ohio.

Dealers and producers who buy honey, kindly ask for a late number of the Review, giving a list of members having honey for sale. Many carloads are listed in the October number. Address, 9Atf
The Bee-Keepers' Review, Northstar, Mich.

For Sale—Our crop of "Elite" white clover extracted honey. None better produced. Also, Raspberry extracted, blended with willow-herb, nearly as white as the clover, good body and flavor, 8c per pound. Sample of either free. Address.
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FOR SALE

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For Sale—Empty second-hand cans, two cans to the case; good as new; 25c per case.
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Beautiful Pampas Grass, perfectly hardy; grows 10 ft. high. Good shade for chickens and bee hives, and an ornament for any yard, city or country. Sent by express, $1.00 a bunch; not prepaid.
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M. C. Silsbee, R. D. 3, Cohocton, N. Y.

A Merry Christmas and Prosperous New Year to readers of the American Bee Journal, and lucky users of the Schamu Roller Entrance Bottom Board. My new catalog will be out April 1, 1914. Send for a copy. Dr Chas. G. Schamu, Liverpool, N. Y.

Honey as a Health Food is a 16-page booklet giving uses of honey in recipes and as a medicine. Just the thing to create a local demand for your honey. We print your business card on all orders for 100 or more. Prices as follows, postpaid: 50 copies 90c, 100 for $1.50, 250 for $3 00, 500 for $5.00, 1000 for $9.00. American Bee Journal,
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For Sale—Buff Orpington eggs, pure bloods; $1.00 for 15. Satisfaction guaranteed.
2A1y W. H. Payne, Hamilton, Illinois.

HONEY LABELS

The Number of enquiries coming in for honey labels has been so large that we have decided to put in a stock of these for the convenience of our readers. Should you be in need of anything in this line, send for a copy of our label catalog, which will be sent free. American Bee Journal,
Hamilton, Ill.

SITUATIONS.

Wanted—Position for 1914, all-around bee man; 25 years' experience Best of reference. Will go any place. Prefer California or West. L. W. Benson, Nampa, Idaho.

Dr. Peiro will continue to give the readers of the American Bee Journal free advice regarding the subject of Surgical and Medical treatment. Many have availed themselves of this offer. Return postage is all you need to send. Address, Dr. Peiro, 4536 Perry Street, Chicago, Ill.

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HONEY AND BEESWAX

CHICAGO, Nov. 18.—Sales in the aggregate have been fair during the past month, but the supply is quite heavy, and prices are weak. It is difficult to obtain more than 15@16c per pound for the A No. 1 to fancy grades, and lower grades are more or less neglected, prices ranging from 1@5c per pound less according to kind, condition and color. Consignments have not sold readily owing to these conditions. Extracted is also freely offered with prices of the best grades of white ranging from 8@9c per pound, and ambers from 7@8c per pound, with the undesirable flavors difficult to market. Beeswax is steady and sells upon arrival at from 30@32c per pound, according to color and cleanliness. R. A. BURNETT & CO.

SAN FRANCISCO, Nov. 15.—The comb honey market is overstocked, and little or no demand at present, and prices have dropped accordingly. No. 1 fancy, 13@15c; No. 2, 10@12c; dark, 8@10c. Extracted, water-white, 9c; white, 7½@8c; amber, 6@7c; darker grades, 5@5½c. Beeswax, 30@32c per pound. Very little offered. JOHN C. FROHLIGER.

KANSAS CITY, MO., Nov. 10.—Receipts of comb honey are large; demand fair. Receipts of extracted not large; demand good. We quote as follows: No. 1 white comb, 24 sections per case, $2.75; No. 2, $2.50. There is a limited demand for light amber at the same price of white. White extracted, per pound, 8@8½c; amber, 7@8c. No. 1 beeswax, per pound, 30c; No. 2, 25c.
C. C. CLEMONS PRODUCE COMPANY.

CINCINNATI, Nov. 3.—The demand for both comb and extracted honey is not as brisk as it should be for this time of the year. We are receiving quantities of both comb and extracted honey. Fancy white clover comb honey is selling at 16c per pound. No 1 white is selling at $3.50 per case of 24 sections. Off grades do not sell. White clover extracted honey in 60-pound cans is selling from 9@9½c per pound. Amber grades are selling from 7½@8½c per pound, according to grade and quantity purchased. Beeswax is selling from $33 to $35 per hundred.

The above are our selling prices, not what we are paying. C. H. W. WEBER & CO.

BOSTON, Nov. 19.—Fancy and No. 1 white comb, 16@17c per pound. New fancy white extracted in 5-gallon cans, 10@11c. Beeswax, 30c. Pure white honey in barrels, 9c per pound. BLAKE,-LEE COMPANY.

LOS ANGELES, Nov. 10.—The market on California honey has been inactive recently, on account of the failure of the sage honey crop and the scarcity of other fancy varieties in this State. We think this is largely accounted for by the fact that there has been plenty of other kinds of honey produced both in the western States and in the East. There is a car of fancy white orange honey still to be had at 9¼@9½c, f. o. b. Los Angeles, and there are a few cars of alfalfa light amber honey which could be sold at about 6c per pound f. o. b. shipping point; also one car, possibly two, of fancy light amber mountain honey at about 7c. Outside of this small quantity the honey business in the extreme West depends upon the sweet clover and white alfalfa honey produced in the States lying just east of California. This is held now at 6¾@7c f. o b. shipping point.

There has been a lively demand for beeswax at prices higher than usual, and on this account the producers have sold rather freely. Eastern buyers are bidding 39c per pound and upwards f. o. b. California.
HAMILTON & MENDERSON.

CINCINNATI, Nov. 19.—The demand for honey is good. We sell fine table honey in 60-pound cans from 8@10c a pound, according to the quality and quantity. Amber honey in barrels from 5½@8c. Comb honey, the very fanciest we are getting, from $3.75 to $4.00 a case. For choice bright yellow beeswax we are paying 30c a pound delivered here. THE FRED W. MUTH CO.

INDIANAPOLIS, Nov. 18.—Honey is moving freely. Fancy white comb is selling at 16@17c; No. 1 white, one cent less Finest extracted, 9@10c in 5-gallon cans. Beeswax is in good demand, and producers are being paid 32c, cash or trade.
WALTER S. POUDER.

DENVER, Nov. 19.—Our local market is well supplied with honey, and our jobbing quotations are as follows: Strictly No. 1 white. per case of 24 sections, $2.70; choice, $2.57, No. 2, $2.43. Extracted, white, 8@9c; light amber, 7@7½c. We are in the market for beeswax, and pay 30c per pound in cash, and 32c in trade delivered here.

THE COLO. HONEY-PRODUCERS' ASS'N.,
Frank Rauchfuss, *Mgr.*

NEW YORK, Nov. 19.—The market condition of comb honey remains the same, and we quote fancy white at 16c, No. 1 at 14@15c, No. 2 at 13c, mixed and buckwheat at 10@11c, according to quality. On account of the somewhat short crop in the eastern States, a few cars of western comb honey have been sent into our market, and this in connection with the nearby crop is sufficient supply to meet demands. Extracted honey remains about the same. There is a fair demand for white clover which is selling at from 8½@9c, amber to light amber at 7½@8c, buckwheat at 7@7½c. Southern honey in barrels is selling at from 60@75c per gallon, according to quality with plenty of supplies.

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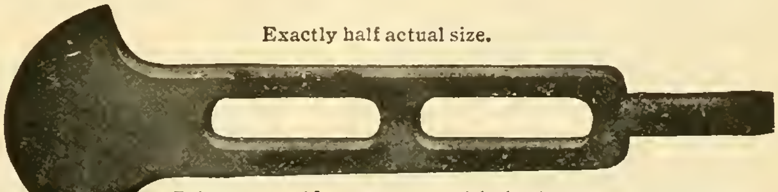

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DAVID RUNNING, Grindstone City, Mich., July 1°, 1910.

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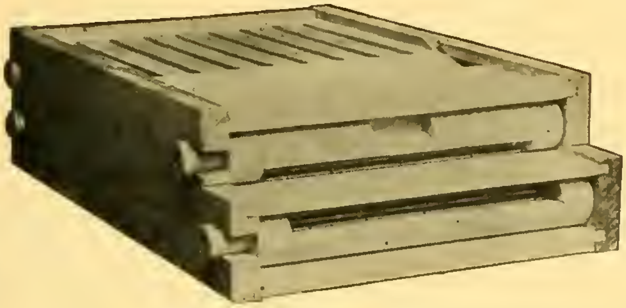

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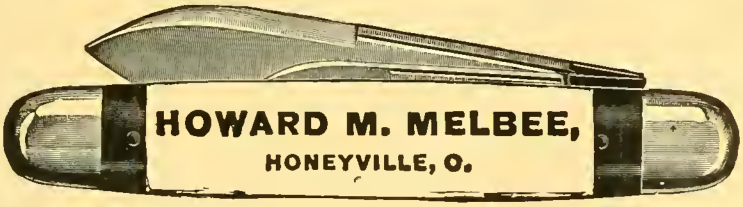

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